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Independent Refiners Rapidly Meeting Jobber Demand for Anti-Knock Fuel

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, Nov. 21

DEVELOPMENTS of the past few months in the production of anti-knock gasolines at Independent refineries lead to the conclusion that by the time the contract of the Standard Oil Co. of Indiana with the Ethyl Gasoline Corp. has expired there will be a sufficient volume of an equally effective product so that it will not be necessary for jobbers to put in Ethyl to compete with the Standard.

If development is carried on as rapidly in the future as it has been recently it appears likely that another year may find gasolines of better than 40 per cent benzol equivalent available in sufficient volume so that any jobber may carry a premium anti-knock gasoline.

The situation in the Middle West has thus changed completely in only a few months. It has not been long since jobbers in Indiana marketing territory were worrying about their ability to meet the competition. In other areas Ethyl is available to any reputable dealer who will contract to handle it. But the Standard of Indiana has an exclusive contract in its territory for another year or more.

IT WILL be remembered that only a few months ago the manufacturers of Chrysler cars announced their red-head high compression motors. In the *Saturday Evening Post* particularly the Chrysler advertisement stated that the motor required high compression motor fuel. The Ethyl Gasoline Corp. had cleverly arranged to obtain advertising space beside that used by Chrysler in which it told the motorist that Ethyl gasoline was a high compression fuel. The lay-out of the advertisements of the two companies was similar so that it appeared to the average reader that the two were in effect one advertisement.

It was this hook-up which more than anything else started Mid-Continent refiners on an intensive research campaign which was described in the Oct. 26 issue of NATIONAL PETROLEUM NEWS. Test machines developed by the General Motors Research Corp., originators of Ethyl, were installed to develop a product to compete with Ethyl.

SCARCELY a week passes now that some refiner does not announce that he has developed an anti-knock motor fuel with a benzol equivalent up to 40 per cent or better. In the coming months it is expected that such announcements will multiply in number.

An example of the trend may be seen in the Nov. 16 issue of NATIONAL PETROLEUM NEWS. On page 20 was an article describing a new vapor phase cracking process developed by the Pure Oil Co. by means of which a gasoline is being produced which is claimed to be equal to pure benzol as an anti-knock motor fuel.

An analysis of the gasoline showed it to contain no paraffines. On page 110 of the same issue it was reported that the Manhattan Oil Co. of Kansas City had brought out a new motor fuel known as Man-Go-Gas which has tested well above 40 per cent benzol equivalent.

A user of gasoline in Kansas City which has a large number of steep hills told the writer that he has found four gasolines in his shopping around that prevent his motor from knocking on the hills. One of these is Ethyl and three others are produced by Independent refining organizations.

THE latest announcement of an anti-knock gasoline comes from the Vickers Petroleum Co. of Wichita, Kan., which has a refinery at Potwin. A few weeks ago the Empire Oil & Refining Co. brought out its Kool Motor 6 to 1 gasoline as a special premium anti-knock product.

Manufacturers of natural gasoline are finding that the work done by Dr. G. G. Brown of the University of Michigan, is beginning to pay dividends. Within the past few months jobbers in many parts of the country have begun buying natural gasoline for blending in their own tanks to produce highly volatile gasolines which they can sell at a premium.

Specially fractionated natural gasolines with an initial boiling point as high as 100 degrees F. are being purchased by some jobbers in the northern states for sale direct to motorists. In some cases these special straight natural gasolines are bringing a premium as high as 5 cents per gallon over ordinary gasoline. The blends of regular gasoline with 20 to 50 per cent of closely fractionated natural gasolines are selling at a 3 cent premium.

Interest will attach to the new gasolines to be sold direct to the public by the Phillips Petroleum Co. of Bartlesville, at its system of sta-

tions which will be opened within the next few days at Bartlesville and several Kansas towns. It is understood that the Phillips gasoline will consist almost entirely of natural gasoline. Some rumors have been that a little cracked naphtha will be added to increase the end point of the product.

Findings of those engaged in research to obtain anti-knock motor fuels appear to be that the gasolines can be improved by adding to their effective volatility, by selecting crudes of original anti-knock value, by certain changes in liquid phase cracking and by vapor phase cracking. Thus far no new chemical substances have been announced as knock suppressors as a result of the research work at Mid-Continent refineries although it is known that much work has been done along that line.

Supreme Court Rules Against Mexican Petroleum Law

HOUSTON, Nov. 18

FOREIGN oil interests operating in the Tampico district regard as a signal victory, but not final, the Nov. 17 decision of the Mexican supreme court restraining the department of industry, commerce and labor from cancelling certain drilling permits of the Mexican Petroleum Co., subsidiary of the Pan American Petroleum & Transport Co., which in turn is controlled by the Standard Oil Co. of Indiana.

In granting the amparo, or injunction, sought by the Pan American interests, the Mexican supreme court declared unconstitutional sections 14 and 15 of the new petroleum law insofar as they applied to the specific properties and issues involved in the present suit. It did not, however, declare the two sections of the law unconstitutional in blanket terms for all purposes; nor did the decision invalidate other sections of the law.

Sec. 14, in effect, had substituted 50-year concessions for oil land titles acquired prior to the Carranza constitution of 1917. Sec. 15 provided for the forfeiture of titles to oil lands for which no applications for confirmatory concessions had been made within one year from the effective date of the petroleum law.

Since the court limits its decision of unconstitutionality to Secs. 14 and 15, and further makes the ruling apply only to the properties and issues in the specific suit, the victory gained is individual to the Mexican Petroleum Co. The present ruling may indicate a course to be followed in future court decisions; but no precedent is established in the manner of American legal practice.

Four additional decisions of similar character would be required before Secs. 14 and 15 of the petroleum law could be wiped out and their annulment made to apply generally.

Additional suits of the Mexican Petroleum Co., and others, are before the supreme court for decision. Rulings on them are not expected immediately, however, as the Mexican supreme court is reported ready to go into a vacation in a few days.

Press dispatches from Mexico City quote Magistrate Salvador Urbina, who is regarded principally responsible for the supreme court's 9 to 2 decision, as saying that foreign companies still must have their land titles confirmed by the government; however, he said, the law cannot set a limitation in these rights.

The written text of the decision has not been made public by the supreme court at Mexico City, hence American oil operators are reserving detailed comment; they point out, however, that the ruling completely justifies their attitude toward disputed parts of the petroleum law, which became effective Jan. 1, 1927.

Foreign operators in Mexico took the position that the law was retroactive and confiscatory insofar as it applied to properties acquired prior to May 1, 1917, the effective date of the Carranza constitution which provided for the subsequent petroleum regulations nationalizing hydrocarbons in the subsoil. They made no protest to Mexico's nationalization program as applied to properties acquired after May 1, 1917.

Coming Meetings

American Petroleum Institute, Hotel Stevens, Chicago, Dec. 6, 7, 8.

Montana Chapter, Rocky Mountain Oil & Gas Association, Great Falls, Mont., Dec. 9, 10.

Nebraska Independent Oil Men's Association, Hotel Fontenelle, Omaha, Neb., Dec. 14, 15.

Ohio Petroleum Marketers Association Spring Convention and Exhibit Exposition, Neil House, Columbus, O., Feb. 22, 23, 24.

American Oil Men's Association, Hotel Stevens, Chicago, March 6, 7 and 8.

American Oil Burner Association, Hotel Stevens, Chicago, April 3, 4, 5, 1928.

Supreme Court Reverses Braden Decision

TULSA, Nov. 21.—The decision handed down Monday by the U. S. Supreme court in favor of the government in the Braden tax case leaves the status of operations on Osage lands unchanged. Had the Braden estate won, large refunds of taxes paid by operators on Osage lands would have been made by the government, amounting to more than $800,000 alone for the Braden estate.

The Glenn T. Braden estate, plaintiff in the original case, was seeking recovery of income tax paid by Braden on income derived from oil taken from Osage Indian land. The estate claimed that income so obtained was exempt from taxation because Indian land is not taxable by the federal government. In the original case tried in the federal district court at Pittsburgh and in the court of appeals the estate won, the U. S. Supreme court reversing the decision.

Chamber of Commerce Will Back Up the State

HOUSTON, Nov. 21.—Should suits attacking the validity of the Texas relinquishment act result in the state recovering minerals from public lands sold by it, then the weight of influence of the West Texas Chamber of Commerce will be thrown into the ring in an effort to preserve the state's good faith.

This is made clear by W. B. Hamilton, Independent oil operator of Wichita Falls, who is also chairman of the oil and gas section of the west Texas organization. Under the relinquishment act, the state reserved a one-sixteenth royalty in minerals and the surface owner was constituted an agent to effect development, when, if and as possible. The attack on the constitutionality of the act attempts to regain for the state not only the full royalty interest in the lands affected, but the working interest as well.

Court decisions, when made, will deal purely with the legal aspects of the several suits, one of which affects a considerable part of the phenomenal Yates field in Pecos county. If the courts confirm landowners' rights as at present constituted then the situation will be immediately clarified. Should their rulings result in the relinquishment act being declared unconstitutional the West Texas Chamber of Commerce plans to take whatever action it can to rectify the moral situation.

DENVER, Colo.—A bulk station has just been completed here by the Colorado Petroleum Products Co., distributor of Havoline motor oil in Colorado, reports Edgar H. Rust, president.

Brown Says Natural Gasoline Blend Will Run 6 to 1 Compression Engine

By William E. Green
N. P. N. STAFF WRITER

LOS ANGELES, Nov. 17—A COMPRESSION ratio of much over 6 to 1 does not appear practical for the ordinary automobile engine driven by the average run of driver and serviced by the ordinary garage mechanic; and with a 6 to 1 compression ratio it should be possible to obtain thoroughly satisfactory service from blends of natural and refinery gasoline without resorting to further blending of anti-knock compounds with gasoline, so said Dr. G. G. Brown, University of Michigan, at the California Natural Gasoline Association convention here Nov. 15 and 16.

Dr. Brown, who is director of research for the Association of Natural Gasoline Manufacturers, was on his feet all of the second day. In the morning he gave his address and in the afternoon he was answering questions from the floor and discussing anti-knock characteristics of motor fuels and the gas lock effect in excessively low initial natural gasoline blends.

Papers were read during the first day, and the convention closed with a banquet. More than 500 men registered, including members and visitors and approximately 500 persons attended the banquet.

In discussion of anti-knock properties of various fuels regarding the point made that blend of natural and refined gasoline would be satisfactory in a 6 to 1 compression ratio engine without use of anti-knock compounds, Dr. Brown did not discuss whether there was sufficient supply of natural gasoline available to meet the demand if all cars were designed with so high a compression.

The so-called gas locking of the carbureter was caused by the heating of the fuel in the carbureter to a temperature such that premature vaporization occurred within the passages of the carbureter leading to the atomizing jets or within the jets, Dr. Brown said. This premature vaporization holds back the flow of fuel into the manifold and causes the engine either to lose power or fail to operate.

The cure for gas locking is in the elimination of excessively low initial volatilities, he said.

That considerably heavier fractions can be advantageously used than at present, provided sufficient additional natural gasoline is added to give correct initial and 10 to 50 per cent effective volatilities, was a high point of Dr. Brown's address.

Such a change in motor fuel composition would result in a material increase in percentage production of straight run gasoline cut from each barrel of crude and such a gasoline would be a material improvement over the average commercial product now on the market, Dr. Brown said.

During the morning session he discussed the volatility characteristics of gasoline motor fuels and the relationship of these volatility characteristics to motor performance.

As outlined by Dr. Brown, the effective volatility indicated by the initial 10 per cent range on the Engler distillation curve determines the relative ease of starting a cold motor, where ease of starting is defined as the ease of obtaining the first explosion.

After the motor has been started then the fuel must exhibit certain additional accelerating characteristics in order to permit of picking up a load with a cold motor without having to resort to the excessive use of the choke. The accelerating characteristics of a fuel are indicated by the 10 to 50 per cent range of the Engler distillation curve.

With a motor once under proper headway and thoroughly heated up the third volatility characteristic of a fuel comes into prominent consideration. This third volatility phase revolves around the 90 per cent point of the distillation curve and determines the degree of efficiency with which the motor will operate under conditions of part open throttle.

Dr. Brown was enthusiastic at the interest of the California natural gasoline manufacturers. Several California chemists said they have substantiated Dr. Brown's conclusions. Dr. Brown also complimented the paper by Lester O. Warner on "Analytical Gas and Gasoline Fractionation at Low Temperatures."

At the banquet Nov. 16 LeRoy Dawson presided and introduced Norval White, Pacific coast representative of the American Petroleum Institute and A. V. Borque, secretary of the Natural Gasoline Association of America.

George L. Ratcliffe, is president of the California Natural Gasoline Association; I. B. Funk is vice president; and Paul D. Barton is secretary-treasurer.

"At the present time the association has a total of 382 members—284 of these are active members and 98 are associate members," President Ratcliffe said in the opening remarks. "Both classes of members pay dues of $5 a year. Meetings, preceded by a dinner, which is paid for by each member in attendance, are held one evening each month. Papers are presented at these meetings on subjects of general interest to the membership.

"In my opinion this organization can increase the efficiency of the natural gasoline industry in California in at least five ways. First, by concerted effort towards improving and perfecting apparatus, equipment and processes of manufacture. Second, by eliminating waste and duplication of effort. Third, by recommending uniform methods, specifications, tests, etc. Fourth, by stimulating thought and effort on the part of individual members of the industry who attend the meeting. Fifth, by the gradual elimination of the hostility, suspicion and distrust which is apt to develop between those competing in the industry when there is no common point of contact.

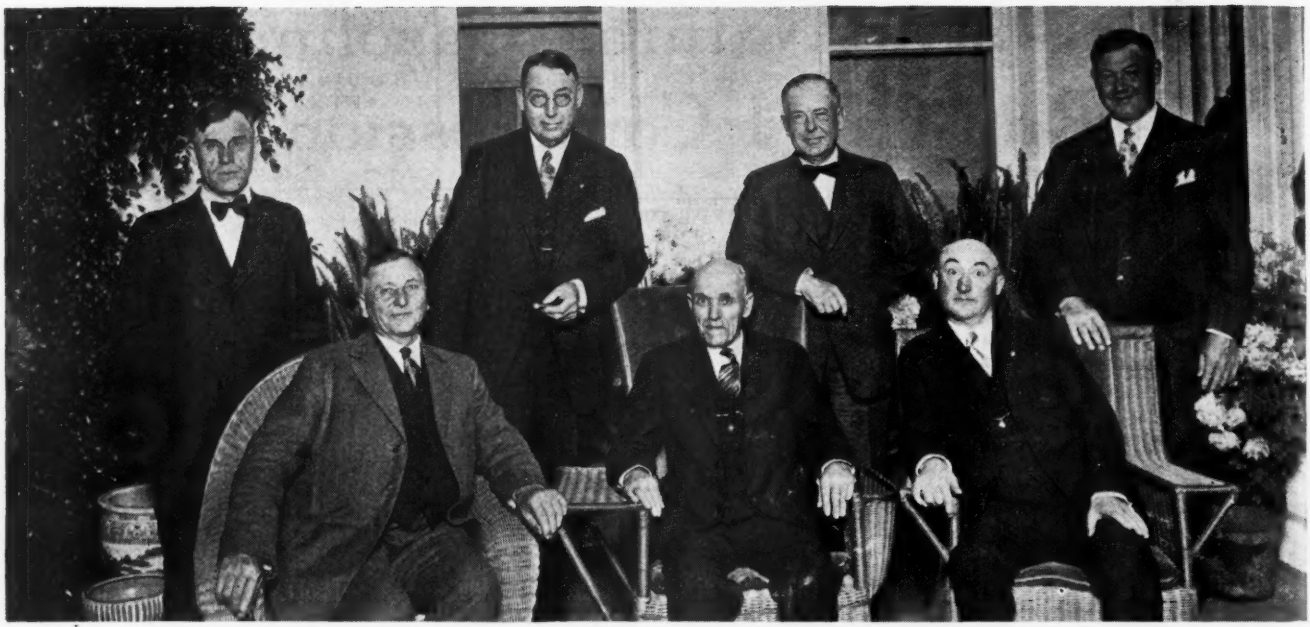
Cracking Equipment Discussed—Page 61

A good many refineries have cracking plants that have been operating for three of four years, in the face of corrosive and general wear and tear conditions of varying severity.

That means that a good many refiners are faced now or will soon be faced with the necessity of replacing some of their cracking equipment—particularly reaction chambers, soaking drums or whatever the reaction vessels are called in the various processes.

In order to lay before refiners data on the suitability of cracking reaction chambers and stills manufactured by different methods, National Petroleum News invited all manufacturers and several users of major cracking equipment to write technical articles on the subject. Two companies manufacturing reaction chambers responded; also two large scale users of cracking equipment.

We call special attention to these articles, which begin on page 61. Further articles on the subject by experts will probably appear in later issues.



Union Oil men with service of 25 years or over receive service pins. Back row, G. L. Armstrong, pumper, F. F. Hill, manager of field operations, W. L. Stewart, President, and W. W. Orcutt, vice president. Front row left to right, Albert Pelle, master of tanker Santa Paula, Carl O. Dahlgren, wharfinger, Oleum refinery, E. J. Brown, transfer agent, Oleum

Veterans Total 202 Years of Service

LOS ANGELES, Nov. 17.—Seven members of Union Oil Co. of California, including its president, W. L. Stewart, with an aggregate total of 202 years of service, were honor guests at a dinner in the home of Mr. Stewart, 790 San Gabriel Boulevard, Pasadena, night of Oct. 9 to receive service pins commemorating their long years of service.

The honor roll included besides Mr. Stewart, as host: W. E. Orcutt, vice-president; Frank F. Hill, manager of field operations; Carl O. Dahlgren, wharfinger at Oleum refinery; G. L. Armstrong, pumper at Ventura; Captain Albert Pelle, of the tanker Santa Paula, and Edward J. Brown of the company's transfer office at Oleum.

Mr. Stewart has been continuously associated with the Union for 33 years, although his first connections with the company began in 1889, the year before the Torrey Canyon, Sespe and Hardison and Stewart Oil companies were consolidated into the Union Oil Co. of California.

Frank F. Hill, with 28 years of service, is considered one of the most practical oil men on the Pacific coast today. Starting as a teamster in the Ventura field, he has been associated with the development and production end of the industry.

Carl O. Dahlgren, wharfinger at Oleum, is a 32-year man. He was a member of the construction crew in the building of that refinery, and upon its completion went to work there.

W. W. Orcutt has to his credit 29 years of service with the company. Under his direction, Union Oil Co. was the first on the coast to organize a geological department for research work and the discovery of new oil fields. The success of this department under Mr. Orcutt's direction in the application of scientific principles to the solving of the problems in the oil fields has probably been one of the greatest factors in inducing California oil men to recognize the value of geological work.

G. L. Armstrong and Captain Albert Pelle each have been affiliated with the Union for 27 years. Mr. Pelle's connections began as a deck hand on the Santa Paula. Mr. Armstrong as a pumper at Ventura, now fills the same position he held when he first started with the company.

Edward J. Brown received his 25-year service pin. He is cashier at Oleum refinery.

In presenting the service pins, Mr. Stewart reviewed briefly the history and growth of the company, and paid tribute to the "old timers" whose services had aided materially in the progress of Union Oil Co. •

In addition to the honored guests there were present at the dinner; E. W. Clark, executive vice-president; L. P. St. Clair, vice-president; R. D. Matthews, comptroller; P. N. Boggs, assistant general manager; Chester W. Brown, director of exploration and production; Paul M. Gregg, counsel; John McPeak, secretary, and W. L. Stewart, Jr., secretary of the manufacturing committee.

Humble Pipeline Capital Stock to be Increased

Staff Special

HOUSTON, Nov. 18.—Humble Pipeline Co., full subsidiary of Humble Oil & Refining Co., has made application to the secretary of state at Austin to increase its capital from $24,000,000 to $50,000,000. The increase is explained as being made to get the capital stock more representative of the company's investment in pipeline facilities in Texas.

Humble's pipeline investments exceed by several million dollars the new capital stock figure and the increase of $26,000,000 fails to equal the capital expenditures put into new construction in Texas this year.

A book of value to chemists and laboratory workers who have to make conversions from one method of measuring viscosity oils to another is "Viscometric Conversion Tables for Petroleum Lubricating Oils," by T. T. Gray, head of the Gray Processes Corp., Newark, N. J.

The first chapter is devoted to a discussion of the physical characteristics of unblended oils, and viscosity is defined. In the following chapter Redwood, Saybolt and Engler methods of determining viscosity are discussed and their comparative results shown in tables and charts. Determination of unknown viscosities and viscosities of unblended Pennsylvania cylinder stocks are taken up in later chapters. The book gives complete rules and methods for converting viscosity from one scale to another.

Agent's Contract is Not Supplanting Q. D. A. in Indiana Territory

By Ward K. Halbert

N. P. N. STAFF WRITER

CHICAGO, Nov. 18

OFFICIALS of the Standard Oil Co. of Indiana say that NATIONAL PETROLEUM NEWS. in its account of the Standard's new "authorized agent's agreement" (Nov. 9, page 17) made a mountain out of a mole hill. But, on the other hand, Independent oil men say, "Tell us more," so here goes:

In the first place the new contract was not meant for everybody. It is not being offered to all Standard's dealers and most likely never will be. It was designed to meet the demands of a hand picked, specially desirable, "silk stocking" group of private filling station owners. It was made available last July 1 and only about 250 of them have been signed up, so far.

Around the S. O. offices, the new contract is called the "P.D.I. contract" and the initials stand for Private Drive In. Clearly, the name excludes curb pump operators. Moreover, the terms of the contract exclude them. A dealer of small gallonage and limited facilities can make more money under the old Quantity Discount Agreement than he could under the new P.D.I. contract. A look at the two scales will show that the minimum P.D.I. commission is 2½ cents while the minimum Q.D.A. refund is 3 cents.

STANDARD OIL CO. has had a special contract for owners of private filling stations for several years. They are older agreements than the Q. D. A. but they never existed in great numbers. Under the terms of this special contract the owner rented his station to the company for a monthly rental, one year at a time, and sold Red Crown gasoline through his own establishment for a flat commission of 2 cents a gallon. But on July 1, Standard cut out the flat 2-cent commission and substituted a graduated commission on a gallonage basis, as follows:

Per Month	Per Gallon
Less than 6,000 gallons	2½c
More than 6,000 gallons	3
More than 15,000 gallons	3½
More than 15,000 gallons	4½

Salesmen of the Standard Oil Co. of Indiana, scattered over 10 states, started quietly last July to offer this improved contract to desirable dealer customers. They extended it to their own P.D.I. customers and it was accepted 100 per cent, of course, because it gave these men better commissions. They offered it also to certain of their better Q.D.A. customers. Not all of them took it but some of them did. In the meantime they offered it to the most desirable dealer customers of their competitors.

WHEN the salesmen started out to get new customers with it the news began to filter out. Dealers who did not accept the Standard's offer remembered all of the proposition they could and told it to other oil men. The main features were that the P.D.I., wherever in force, supplanted the Q.D.A., and that it contemplated no tank wagon price but only the filling station price.

The rumors that sprang up in all corners of Standard of Indiana territory were of the same purport; that Standard would soon abolish the Q.D.A. and at the same time would make the filling station price and the tank wagon price the same. The rumors were denied repeatedly by Standard officials before they died out of their own monotony.

As explained in NATIONAL PETROLEUM NEWS of Nov. 9, the new arrangement with private filling station owners is developed through two separate contracts. First the Standard leases the station for a period of one year and, second, the Standard hires the owners of the station to run it as long as he runs it to suit the company.

THE filling station owner is the landlord and the Standard Oil Co. is the tenant but the Standard Oil Co. is the employer and the owner is the employee, working on a commission.

The filling station owner pays taxes on his station as he would on any real estate. Standard pays taxes on its pumps, tanks and equipment as any tenant would pay taxes on furniture. The owner keeps up his property.

The Standard maintains its equipment and furnishings. If the station owner gets tired of his bargain he can terminate the arrangement at end of the first year by simply evicting his tenant when the lease expires. If the Standard wants to quit at the end of the first year it may refuse to renew the lease.

If the Standard Oil Co. makes one of these contracts with a man thinking he is the right sort of person to represent the company and discovers soon afterward that he is not the kind of individual they want, they can fire him and operate the station with their own salaried employees until the lease expires.

Since the terms of the P.D.I. contract were made public, oil men have expressed the belief that the Standard pays the station owner rent on a gallonage basis. This, the Standard people deny.

THE figure the company pays monthly varies with each contract. Desirability of the location, facilities for serving the trade, space, advertising advantage and many other things are considered in bargaining for the lease. Certainly gallonage enters into it. A station doing 1000 gallons a day would justify more rent than one selling only 50 gallons, but it is not figured by the gallon.

Also the question has been brought up, "Why would a filling station owner prefer the new contract over the old Quantity Discount Agreement, seeing the spread per gallon is less?" That question can best be answered with an illustration.

Suppose Paul Jones owns a filling station in a good sized town and is operating under the familiar Q.D.A. plan in the third bracket. He is selling 6000 gallons a month and gets a discount of 1½ cents under tank wagon or a gross margin of 3½ cents. There are some truck fleets in the neighborhood and Jones thinks he could get their business by quoting the owner the same price offered at the competitor's station.

But any company-owned and operated station gives big consumers 2 cents off, under the terms of the retail Q.D.A. and that would leave him only 1½ cents a gallon. If the trucks would use 4000 gallons a month and lift him into the second bracket which gives a refund of 2 cents it would be worth the effort. Otherwise he would not try.

But if Jones will just forget about Q.D.A. and sign a P.D.I. contract; for the first few days he will get only 3 cents a gallon on his total business but he will receive some rent for his station to offset the loss and will have a real incentive to go out and

To Jobbers and Refiners Who Are About to Make Contracts

WE HAVE no interest, strictly speaking, in the kind of a contract that you make, or what price basis you use, but as we have pointed out so many times in the past, we do feel the responsibility of seeing that both parties to these contracts for gasoline understand what a particular price basis for prices really means, especially where NATIONAL PETROLEUM NEWS or the Oilgram are involved.

Many jobbers, and even refiners, still do not seem to appreciate that there is a vast difference between a quotation on a Group 3 price basis and the price at which the refiners in Group 3 actually sell.

So let us explain again that the oil industry in the middle west has for several years been quoting gasoline on a Group 3 price basis regardless of the point from which the gasoline is shipped. Refiners in Louisiana, Arkansas, Illinois, North Texas and brokers everywhere have quoted on a Group 3 price basis instead of f. o. b. their own refining points. A great many jobbers have assumed, therefore, that that price could be directly compared with the price at which the refiners in Group 3 were selling.

There are sections of the country to which refiners in these other districts have a lower freight rate than have Group 3 refiners. In the past year or so Group 3 refiners have refused to compete for business in those territories that were favored with lower freight rates from Louisiana, for instance, than from Oklahoma. When the Group 3 refiners do not care to sell in these competitive territories that have a lower freight rate from other refining points, they don't have to and the real Group 3 refiners' prices therefore will not be as low as the prices of the refiners in other territories who are taking the business. There have been times when refiners in Group 3 have met some of these prices, but the occasions have been few in the past season particularly.

All we can do as a reporting agency is to go to the books of each group of refiners and find out at what price they have sold their goods f. o. b. their own refineries. The prices we have shown are absolutely accurate on that basis. We know it, because we have checked these refiners' books, not once, but many times.

The low prices that the jobbers often times hear about and which are quoted on a Group 3 basis are almost invariably the same prices that we show, but f. o. b. the particular refining group from which shipment was made.

So in making any contracts this year, we urge the parties to those contracts to please appreciate just what the factors are in this price situation and see that they have clearly in their minds the definition of the terms they are using and a clear understanding of the particular price basis.—W. C. P.

sell the truck fleet operators.

Because when he gets them into his station he does not have to give them their 2-cent Q.D.A. The company (his employer) pays that for him and gives him 3 cents a gallon commission on what he sells to the trucks besides. Better still, he can sell enough new business, perhaps, to lift him into the second bracket and get 3½ cents a gallon any way.

"But," it is asked, "how does the company come out. How can they afford to give this commission, larger than the Q.D.A. margin and all?" Continue with the illustration:

Paul Jones is a man of 40, has a son 17 years old, and he is generally and favorably known in his home town. He could not go out and earn $2,500 a year in that town because he is not especially skillful and jobs like that are scarce in medium sized places. But he owns his home and his filling station. He has so many friends that Standard can do business better with him than against him.

MR. JONES' 6000 gallons a month brings an annual gross return of $2160. Motor oil sales, grease service, alcohol in winter, etc., bring that up close to about $2500. That is the same as a salary to him. It is the family income. He pays his personal bills and his station's expenses out of it. His son helps him when out of school. What the family is able to save is his profit.

If the Standard Oil Co. built a station in that town, even if they might hope to do as much business as Jones, they would have to hire a man and a helper and pay more than $2500 for the two before they could expect any return at all—to say nothing of profit.

With the P.D.I., the company acquires the outlet desired, a larger outlet than could be had without Mr. Jones, probably, at a less cost and saves the investment in grounds and building.

FROM the standpoint of the Independent jobber, the new contract is spoken of favorably by some. Under its terms the commission agent must maintain the price. He must sell the company's gasoline at the company's price.

The goods are never his. He is the company's agent and if he violates the price order he is subject to discharge like a salaried man who would be foolish enough to cut the price at a company owned station.

On the other hand, some Independents comment unfavorably in regard to the new retailer's proposition. It is passing along a still wider commission on gasoline sales than any previous dealer contracts have done. It gives the retail agent more money and the Independents will have to meet that proposition in some way. Moreover, it stimulates men with local acquaintance and influence to exert exceptional effort in the Standard Oil Co's. behalf. This, too, the Independents will have to cope with.

21st Well in Hendricks Field is Completed

FORT WORTH, Nov. 20.—The twenty-first producing well in the Hendricks field of Winkler county was completed Nov. 19, gauging 980 barrels the first hour in lime pay at 2,885 feet. It is the No. C-1 on the Hendricks ranch in NE NW of section 29 block B-5 in the southern part of the field, and about a mile west of a well recently completed by the Cranfill Bros., and others for potential daily production of 20,000 barrels maximum.

Another current Hendricks field completion is Independent Oil and Gas Co. A-1 Hendricks in the NW of the SW section 43, which made 300 barrels the first hour at 2,879 feet.

These wells brought estimated potential open flow production well above 50,000 barrels daily, as compared with actually exploited yields from pinched wells recently averaging 15,000 to 18,000 barrels daily.

Ban Lifted from Q.D.A. in Wisconsin By Department of Markets

MADISON, Wis., Nov. 17

WISCONSIN'S Department of Markets has hauled down the "Verboten" sign which for more than a year has prohibited selling gasoline under the retail Q.D.A. in that state. Now Wisconsin is just like the other nine states in Standard Oil Co. of Indiana territory, so far as the gasoline price structure in concerned.

The department withdrew from its position acknowledging that the measures it resorted to in April, 1926, have proven of little or no value. It also admits that the farmers of Wisconsin may be justified in their objection to the department's limitations on group purchases of gasoline.

The department does not, however, express any greater respect for the Quantity Discount Agreement of the Standard Oil Co. of Indiana now than it had then.

There was never a law or a departmental ruling against the retail Q.D.A. in Wisconsin. It was rendered inoperative by an agreement between the oil companies and the department of markets, arrived at after a series of conferences at various points in Wisconsin, early in 1926.

It will be remembered that Standard Oil Co. inaugurated the Q.D.A. on July 1, 1925. The wholesale feature of it (that which provided discounts to buyers from tank trucks) was never attacked here.

The Independent oil men of the state thought they could meet that form of competition as easily as they could compete against the big companies with only one tank wagon price. But they felt the retail Q.D.A. took business from them that was rightly their own.

Standard Oil Co. and other major distributors were signing up "cross country" contracts with operators of truck fleets and fleets of salesmen's cars traveling extensively over wide areas. Thus the management of a large corps of motoring salesmen dictated to them what brand of gasoline to buy, no matter where they were, and the Independents had no chance to compete for the patronage.

Attorney General Eckern of Wisconsin was, at that time, laying groundwork for his candidacy to become governor. He subsequently made the race and was defeated but before his candidacy was announced he gained national prominence for a short while by holding a protracted series of conferences over the state, making a general exposé of the oil industry and making oil men defend the economics of their marketing methods.

Edward Nordman, commissioner of markets, presided over these conferences. D. E. Montgomery, Mr. Nordman's assistant, an economist formerly associated with University of Wisconsin, supplied the fact material for the investigation by contact with the oil people, and Mr. Eckern examined the witnesses, who were mostly oil men.

Among them were vice presidents and directors of the Standard Oil Co., from Chicago. About 30 oil men attended all the hearings and some of them spent literally weeks away from their business to do so.

Toward the end of April the first series of meetings closed with a session here in Madison. Nothing had happened. The department issued no orders but refrained from doing so after the oil companies consented to leave the "cross country" feature of the retail Q.D.A. out of operation in the state. That is how the thing stood until Nov. 15, 1927.

THE department of markets has not withdrawn from its position that the Q.D.A. is wrong and discriminatory. The officials still think it is unfair to give a better price to a sausage salesman than to a tuckpointer just because the salesman works for a big packing company and the laborer does not.

But the department has been shown that the remedy applied in April, 1926, does about as much harm to one class of citizens as good to another.

The last conference between state officials and oil men took place in Madison on Aug. 26. A full account of it was published in NATIONAL PETROLEUM NEWS (Sept. 7, page 51). On that occasion Independent oil men testified that they had lost business to the big companies when the Q.D.A. was launched but denied they had won any of it back 10 months later when the state killed the objectionable feature of it. So, apparently, the Eckern agreement had not done what it was supposed to do for the oil men.

But a new element was injected into the situation on Aug. 26. It was the Farm Bureau of Wisconsin. Farmers brought in testimony to indicate that they had suffered, not as a result of the Q.D.A. but as a result of the agreement.

The Eckern agreement specifically limited the scope of a retail Q.D.A. contract to sales within one town—the town named in the contract. This put the country people definitely out of it. Of course the Standard Oil Co. does not recognize groups of farmers, or groups of anybody, as entitled to a Q.D.A. contract, but some of the other oil companies do, in special cases.

AT ANY rate the farmers felt discriminated against and they made themselves understood at the Madison conference in August.

The department did not abandon its position without study. The contention of the farmers was given serious consideration during the fall. The result was that the following bulletin went out from the office of the Wisconsin Department of Markets to oil companies and all interested parties under date of Nov. 15, 1927:

"The department of markets announces to all oil companies in Wisconsin that the settlement of April 1926, whereby they accepted the department's recommendation that quantity rebates on gasoline be figured solely on deliveries within one city, village, or township, is dissolved and is not binding upon any of them on or after Nov. 15, 1927.

"The department believes that these intercity rebates, paid on large monthly purchases made up of many small deliveries throughout Wisconsin or the middle west, are unfair. By this practice the Standard Oil and other large companies take many of the larger buyers out of the local competitive markets, with the result that the local jobber is often unable to hold a share of this business even though he may offer price concessions below Standard's "normal" level.

"The department finds, however, that the restriction on such contracts which was accepted by the oil companies in 1926, has resulted in a discrimination against country buyers. The attempt to eliminate one unfair practice resulted in another form of unfairness. A number of small rural buyers can not group together to get a quantity rebate, under this limitation, but small city buyers can and do obtain rebates by grouping their gasoline purchases.

"At a hearing held by the department on Aug. 26, a compromise was proposed whereby rural contracts might be written throughout a local competitive territory. The oil companies believed that this would be impracticable, and the independent jobbers' representative recommended that rather than attempt a compromise on this point, the entire rebate plan should be done away with.

"Prohibition of gasoline rebates has been urged upon us both by buying groups and by many oil jobbers, on the ground that they are unjustifiable favors given to large buyers at the expense of the small individual buyers whose business makes up the bulk of the oil trade. It is conceded very generally by oil companies, including Standard Oil, that the amount of rebate paid to large buyers is not determined by the cost of service to those buyers, and in fact that the cost of service has nothing to do with it.

"The department believes that these rebates can, and should, be done away with through the competitive measures of independent jobbers. Independent jobbers usually say that they must follow the lead of the Standard Oil Company in matters of this kind, but we do not believe that they can be compelled to grant rebates which they say are detrimental to their business and unfair to the majority of their customers. Until some action has been tried along this line, the department will defer action on the recommendation made by consumers and jobbers at the last hearing.

Work's Committee to Organize Dec. 3; Doherty Attacks A. P. I. Trio

Staff Special

CLEVELAND, Nov. 22

THE committee of nine suggested by Secretary of the Interior Work at the American Bar Association convention in Buffalo, N. Y., Aug. 30, to study needs for petroleum conservation legislation and to draft a conservation bill for introduction in congress if one is considered to be necessary, will get into action Saturday afternoon, Dec. 3, at an organization meeting.

President E. W. Clark of the American Petroleum Institute last week named three past presidents of the institute to represent the oil industry: Thomas A. O'Donnell, J. Edgar Pew, and W. S. Farish. Gurney E. Lewlin, chairman of the minerals section of the bar association, appointed a committee of nine men versed in mineral law of which Chester I. Long, former U. S. Senator from Kansas, is the chairman. Senator Long said in Washington this morning that this committee of nine would meet Saturday morning and select a sub-committee of three men to represent the bar association on the Work committee of nine. Secretary Work is expected to appoint the government's three representatives on his suggested committee before Saturday.

The bar association's committee will meet at the association's headquarters. The Work committee will probably meet in quarters at the interior department.

Henry L. Doherty, who has long championed the cause of government regulation of crude oil production, opened fire from Battle Creek, Mich., this week on the appointees of President Clark as reactionaries. Mr. Doherty sent this wire to Secretary Work who is chairman of the Federal Oil Conservation Board:

"These men by being made presidents of the American Petroleum Institute have been glorified into real importance and I say to you that these men are equal to the most reactionary in the whole business and they do not represent the present thought of the petroleum industry. I note that Mr. Clark states that the federal government is without power in this matter. Whether right or wrong in this matter, Mr. Clark has prejudged one of the fundamental and important facts that the committee is supposed to pass upon. Therefore it seems to me he would appoint only men who hold this same view. I am compelled to say that any man who has prejudged any feature of this matter of petroleum conservation is not suited to serve on this committee. I also want to reiterate again and most emphatically in spite of all the oil lawyers and their distinguished counsel, Judge Charles Evans Hughes, that there is no question but that the federal government not only has the power to prevent the huge and needless wastes which now characterize the petroleum business but it is its plain and unescapable duty to do so."

"I think passing upon the qualifications of the members of the committee is hardly within the scope of my power," said Secretary Work at Washington, commenting on Mr. Doherty's telegram. He said it laughingly.

The Doherty telegram was sent Nov. 15. Six days before Mr. Doherty had written Secretary Work opposing the expansion of the oil investigation to cover other mineral resources, as was suggested in the appointment of the bar association's committee of nine. Mr. Doherty wrote there was an understanding among some oil men that three business men of the industry were to represent the oil industry and that the bar association would appoint three oil attorneys.

"I do not think that it was your thought that there should be more than three representatives from the oil industry whether they were lawyers or business leaders," he said.

Mr. Doherty also asserted the completeness of his conclusion that the federal government had no power to deal with mineral resources generally but complete power to deal with oil "because of a combination of facts" concerning oil but not concerning any other mineral.

MR. DOHERTY'S letter and telegram attracted attention in Washington on account of the bizarre and insouciant way in which he waved aside the lawyers as not knowing anything about the supposedly grave law question involved in the proposal to enact legislation that would deprive the states of power to regulate production of oil within their territories. Inasmuch as lawyers constitute the vast majority of members of Congress and all judges and justices of the courts are lawyers, the thought was expressed in Washington that Ajax was a small piker when he defied the lightning in comparison with Mr. Doherty sweeping the lawyers into the dust bins.

The Doherty protest containing his statements about the law on the subject, enlivened if it did not illuminate the subject.

Secretary Work Nov. 14 assured Mr. Doherty that he believed the men the bar association would select would be men versed in the basic law of the subject and not active in oil industry affairs. Mr. Doherty also was assured that the oil conservation board has had no opportunity to consider conservation of other minerals.

The Okmulgee District Oil & Gas Association of Okmulgee, Okla., asked Secretary Work this week that before any legislation is considered that there be a thorough congressional investigation of the imminence of exhaustion of the petroleum supply and that "before any measures to enforce hoarding of oil reserves should be attempted by the federal government or the individual states, the anti-trust laws should be repealed or amended so as to permit oil producers to limit their production by agreement among themselves and to afford the industry an opportunity to accomplish voluntarily the exact result such laws would seek to accomplish by the legislative fiat."

THE resolution was presented to Secretary Work by David Logan, consulting geologist, Okmulgee operator, and chairman of the oil and gas committee of the Oklahoma house of representatives, and D. M. Stovall, speaker of the Oklahoma house.

In the preamble were condemned the writings of certain publicists and editors, specifically those of Arthur Brisbane, as inflaming the public mind with distorted pictures of conditions in the petroleum industry.

E. P. Jones, president of the association, wired the conservation board Oct. 16 asking that the Independent operators be given representation and protection on any committee that might be appointed to draft a bill in Congress aiming at federal control of the oil industry. The oil industry felt it was capable of solving its own difficulties, Mr. Jones assured the board, and added it was feared the Independent products would suffer most from regulation.

Secretary Work did not reply until Nov. 17, when he wired he was in thorough accord with the views of the Okmulgee association, and invited the association to co-operate with the board.

It is likely a new report by the committee of seven, on gas waste, known as the Marland committee, will be presented to the A.P.I. directors just previous to the institute's annual meeting in Chicago two weeks hence, The directors have never

(*Continued on Page* 31)

Will Conservation Laws Solve Problem?

THE Federal Oil Conservation Board, or perhaps we might more correctly say, Secretary of the Interior Work, its chairman, apparently desires to have some kind of a bill drawn regulating or controlling oil production, for introduction in the coming session of congress.

Secretary Work's latest moves, and the publicity that has been given them in the name of the oil board, might seem to some to be an effort to maneuver the oil industry into a position, before the public, where if it fails to endorse such proposed legislation as has the backing of the oil board, it will seem to be selfishly refusing to co-operate to conserve the nation's crude oil resources.

Secretary Work talks publicly about the drafting of regulatory legislation, as though the need for such legislation was settled beyond any doubt. He talks about the "insistence" of "the oil industry" itself that the government aid in solving its problem of holding production to something in line with demand, when such "insistence" has been expressed by only a few persons.

He talks about the "waste" in the oil industry, giving the public the impression that he refers to actual physical waste, when all he can have reference to is possible financial loss caused by storing unnecessarily large quantities of oil above ground in periods of overproduction, possible uneconomic uses of excess oil and speeding up improvement in recovery methods. These statements emanating from the oil board give the public a wrong impression of the oil industry and they will serve to make any oil men misunderstood in case they criticize or oppose proposed legislation.

There are three aspects to legislation affecting oil production upon which general opinion must be pretty definitely settled before the actual passage of bills can be considered. We submit that the industry, and the advisors it has called in, are, if anything, more at sea upon all three of these aspects than a year ago, when a special A. P. I. committee started an intensive study of the nature and effect of arbitrary regulation of production.

The first aspect, and that with which the oil industry is most directly concerned, pertains to the engineering principles called into play in regulating production by holding gas and oil in the ground, and the practicability of their application, and their effect on immediate and ultimate production of the properties or fields where applied.

After the past year's study of back-pressuring and its effects in conserving gas and controlling production, under the direction of the American Petroleum Institute's special committee, there is possibly wider difference today than ever among the engineers as to the application and effects of this method of producing oil. Opinion on the economic value of the use of the air-gas lift has changed in the year, as the result of practical experience. When the engineering talent in the oil industry cannot be sure itself, through rapidly changing practice, of the actual methods by which to regulate production, the difficulty of congress planning legislation is apparent.

Another phase to be considered is legal. Fine legal talent, both inside and outside the oil industry, has debated the constitutionality of federal legislation as a limitation of states' rights. The debate is still on.

A third phase is political. What is the state of mind of the public going to be toward legislative effort to regulate production of crude oil, with the probable consequent effect on prices? How far ahead is this generation thinking in terms of conserving petroleum for the future? Hardly as far as some of the more ardent conservationists at Washington are thinking. How would the public regard removing the oil industry, through special legislation, from the application of the federal anti-trust laws and the giving to oil companies of the right to act in concert to regulate production?

There is probably little likelihood that the lawmakers will attempt any really serious legislation, but the opening will be afforded for much discussion of the oil industry of the kind that has gone on in the past. There will be speeches by the Trammels on alleged extortionate prices and monopoly. There will be addresses by others on the Teapot Dome affair.

These will be interspersed with the vast business that will come before the congress on other affairs. Flood control, farm relief, tax reduction, all with their long debates, and, most important of all, from a congressman's standpoint, countless hours of maneuvering for the 1928 national campaigns.

In view of all this, how much time will be spent in studying oil conservation? No time at all, probably.

A simple consideration often disregarded, is the viewpoint of the several states about oil. Nineteen of the states produce oil. About 15 have enough to matter in state political considerations. The congressmen from the non-oil states look at the oil business solely from the interests of the consumer and if they can appear to help him get his gasoline for a low price, their political stock advances correspondingly.

Will these senators and representatives from the non-producing states support a measure that might tend to prevent low prices?

There is one other point of confusion which the Federal Oil Conservation Board, or Secretary Work, could make plain to the mind of the oil industry. Secretary Work has appointed a committee of nine to "draft a bill for the Federal Oil Conservation Board to study and recheck, with a view to its introduction into the seventieth congress." He said he believed, "the time has arrived when the federal government should ask congress for legislation intended to protect our oil deposits against waste in production and the public against future high cost of oil products."

The last public report of the oil board to President Coolidge in September, 1926, contains this statement. "The power of the federal government to regulate oil production is doubtless limited to its own lands, unless the national defense is imperiled by waste or exhaustion of the oil supply."

Is this complete change of view that held by the oil board officially, or is it only Chairman Work's opinion?, oil men ask.—V. B. G.

Photo by Columbian Steel Tank Co.

Six wheel semi-trailer tank truck with 3,500-gallon tank. Standard Oil Co. of New Jersey has two of these units in operation in its Baltimore branch. With two 2,000-gallon trailers which the builders say can be handled, this unit could carry 7,500 gallons of gasoline, or almost a tank carload. This semi-trailer has no chassis frame, the tank's substructure serving this purpose

Semi-Trailers and Trailers Permit Hauling Carload at One Time

Staff Special

CLEVELAND, Nov. 18

A CARLOAD of gasoline by truck at one hauling! Sounds like a myth but it is possible. Equipment capable of making such a delivery is now in use in the oil industry and more capacious equipment is being worked out by truck, tank and motor transportation engineers. Highway restrictions offer the only limitation to the size of load within reason. Further improvement in highway construction will enable the carrying or pulling of larger loads than are now permitted.

The Standard Oil Co. of New Jersey recently installed in its Baltimore branch two heavy duty tractor and semi-trailer units which carry 3,500 gallons of gasoline each. With two 2,000-gallon trailers each unit may carry 7,500 gallons of gasoline on a trip or only 500 gallons less than an 8,000-gallon carload. The Columbian Steel Tank Co., Kansas City, Mo., is building a semi-trailer with tank of 5,000 gallons' capacity, an eight wheel job. To this may be attached a full trailer with tank of 3,000 gallons' capacity, if the tractor is able to pull such a load, giving the complete unit the same capacity as a tank car. The feasibility of the latter size transportation unit is yet to be demonstrated; of the former it has been proved.

The large units of the Standard of New Jersey are in active service delivering gasoline to sub-stations about Baltimore. They were built specifically to meet the Maryland restrictions of 40,000 pounds gross weight for tractor, semi-trailer and load. As the weight of 3,500 gallons of gasoline is approximately 23,000 pounds, special engineering features were necessary so an unique design, frameless, was worked out in the trailer to eliminate excessive weight. The tank's substructure was built to serve as a chassis frame.

It was necessary to have the trailer strong, yet the weight had to be kept down. It also was necessary to have the center of gravity low so there would be no danger of top heaviness. The customary semi-trailer has two disadvantages, J. F. Winchester, the Standard's motor transportation engineer, recently pointed out in Automotive Industries: the weight and height. Frames are constructed substantially and to the frame are attached the fifth wheel, draft gear. and rear axle. The tanks are mounted on them also. This threw the tank so high in the air that there was possibility of upsetting. A drop frame construction, which would have permitted lowering the tank, would add to the weight. It was then decided to build the tank and frame integrally, a development of the Columbian's standard all-metal truck tank unit.

At first glance it would seem that boiler plate must have been used in building this tank unit. Instead, No. 10 gauge steel, the weight recommended by the National Fire Protection Association for containers of not more than 600 gallons' capacity, was used to keep down the dead weight. The tank is composed of six compartments, each compartment being within the limits specified by the N.F.P.A. for No. 10 gauge plate.

Heads and partitions of the tank extend below the belly and are utilized instead of the customary cross cradles of wood or metal. Two 3-inch tubes to carry the hose pass through the tank from front to rear and are welded into each head and partition. This tubular reinforcement braces the tank against breathing and also provides a firm anchorage for the surge plates that pass longitudinally through the tank, without adding weight that is not used for other necessary purposes.

The surge plates are firmly welded to the hose tubes above, to the partitions at their ends and to the tank's belly below. With the tubes and tank the surge plates form a web-like I-beam construction that gives a maximum of strength without increasing the weight of the tank unit.

Outside the tank and running full length are underframe skirts of 3/16-inch steel. These are welded to the shell directly beneath the line where

the surge plates are welded on the inside and to the extended compartment heads and partitions. These are reinforced from the rear to forward of the spring suspension and where the fifth wheel is shackled by 6 x 4 x ⅜-inch angles. The shell is further stiffened by an unloading manifold welded to the bottom of the shell along its entire length.

Each compartment opens into the manifold through an emergency valve. To the manifold is attached a short unloading connection including a 4-inch gate valve and 3-inch hose coupling. Unloading pipe lines are thus eliminated. A master control for the valves is operated from a lever on the right hand side of the tank. In case of a fire when the valves are opened a fusible link in the control system will melt and trip the control lever, closing the valves.

The tank is divided into six compartments for safety and relatively light weight while complying with the N.F.P.A. recommendations and not for separating the liquids because no provision is made for separate discharge of the contents of the various compartments.

Steel running boards, welded to the bulkhead extensions, protect the sides, and a steel channel bumper is placed at the rear.

A drawbar to which a trailer may be linked is hinged to the rear axle. The axle is a 5-ton Mack and connected to the skirt reinforcing angles by rubber shock insulated springs. The wheels are 36 x 14-inch with metal felloes and wood spokes. Tires are 36 x 7-inch dual, single flange.

Westinghouse airbrakes are used on both the rear tractor wheels and the semi-trailer wheels. A compressor is driven by the tractor engine and 100 pounds pressure is carried in tanks on the tractor and trailer. Should the semi-trailer be disconnected the brakes on it would set instantly.

Numerous other safety features have been provided. The trailer unit is chained to the tractor so it could not readily break loose should something happen to the fifth wheel. The tail light is wired in series with the dash light so the driver will know if the tail light is not burning. There are two lights on each side of the tank, suspended from the running board. These lamps show red to the rear, green to the side, and white to the front. There is a generator and storage battery on the tractor and another storage battey on the trailer so lamps may be lighted should the trailer be detached.

The driver's cab is all steel with steel sliding doors. Two fire extinguishers are in it and two more extinguishers are carried on the trailer, one under the rear of each running board.

The three-point mounting gives the tank flexibility and eliminates stresses that might prove dangerous to the welds. The domes provide for 1 per cent expansion.

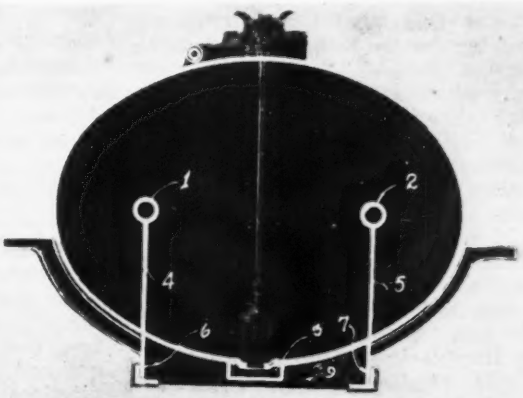
The tractor is a 10-ton Mack of 128-inch wheel base with a 90 horsepower high compression engine. The fifth wheel also is a Mack especially designed for this job. It is shackled to the substructure of the cutaway front section of the tank. Ease and speed of coupling and uncoupling the fifth wheel has been sacrificed for simplicity and expected lower maintenance expense.

Mr. Winchester makes the following comparison with a smaller semitrailer type in an article in Automotive Industries:

"An interesting comparison of the advantage in terms of payload gallons of gasoline of the new design over a 3,000-gallon tank on a frame type of semi-trailer drawn by a truck such as is now in use in New Jersey, is obtained by an investigation of the weights of the two equipments.

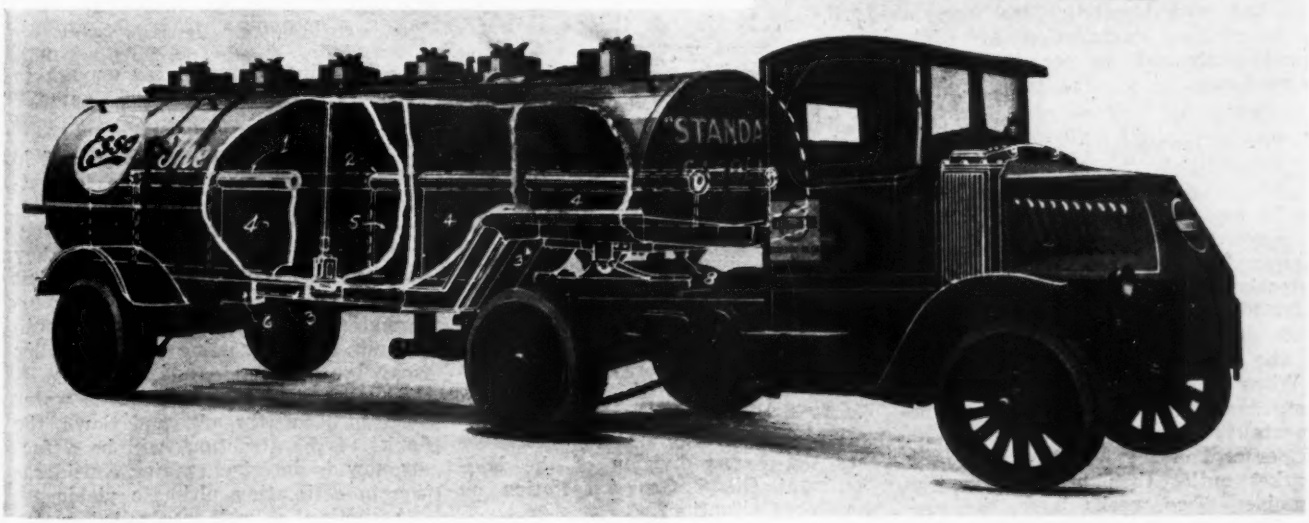
"With the trailer attached but with tank empty, the latest design shows a weight of 21,370 pounds, while the 3,000-gallon tank equipment weighs approximately 26,570 pounds. The total gross weights are approximately 39,999 pounds and 45,230 pounds, respectively, when loaded with 2,995 gallons of gasoline in one case and 3,000 gallons in the other. These loads are capacity for the New Jersey tank and enough for the Maryland tank to keep the gross weight within the legal limit for that state.

"The gross weight difference of about 5,200 pounds when reduced to gasoline, means that the pay load of the New Jersey trailer would have to be reduced by about 835 gallons in order to produce a gross weight legal for operation in Maryland; or, conversely, if the Maryland frameless tank trailer were transferred to the New Jersey operation it could increase its pay load by 835 gallons before exceeding the total weight of a typical 3,000-gallon tank unit using a semi-trailer of the ordinary type."



KEY TO CUTAWAY PHOTO

1 and 2. Hose tubes that serve as braces for bulkheads
3. Combination belly stiffener and discharge manifold
4 and 5. Surge plates that extend length of tank, forming reinforcing web.
6 and 7. Angles welded to underframe skirts and extended bulkheads, to which draft gear and rear axle-spring assembly are shackled
8. Combination rocker and draft frame
9. Bulkhead extensions



Cutaway picture by Columbian Steel Tank Co.

Well Rated at 65,750 Bbls. Daily, Sets New Yates Field Record

By Paul Wagner

N. P. N. STAFF WRITER

HOUSTON, Nov. 17

AS IF answering skepticism, wherever and however dispersed, the Yates field of Pecos county has broken forth again with evidence supporting its right to the title of the "World's Greatest Shallow Oil Development."

Latest evidence comes with completion of a well at 965-993 feet, which produced 2059 barrels in a 45-minute period, through two 4-inch lines and traps and one 4-inch line direct to lease tankage. On the basis of the test mentioned, the well is estimated good for 2745 barrels an hour, or a rated potential of roundly 65,750 barrels daily.

The well is the C-2 of the Mid-Kansas & Transcontinental Companies near the east boundary of their half section lease in the west half of sec. 60, I&GN block 1, Pecos county. It is about a mile and a half north of east of the discovery well of the field.

Yates field total potential, as figured by the pro-rating committee for the last half of November, is officially given at 447,254 barrels. This total takes into account the new well of the Mid-Kansas & Transcontinental partnership, together with other smaller completions since the official gauge of the pro-rating committee at the beginning of November.

Marketed production, which sets the limit of the field's daily output, is soon to be increased to 43,000 barrels daily; 30,000 barrels delivered to the Humble and 13,000 barrels to the Illinois pipelines, daily. The Illinois has been handling 7,000 barrels daily, pending installation of additional equipment to permit the increased runs.

USE of potential production as the yardstick for figuring percentages of runs from leases and companies has brought about a new form of competition in oil development. The company that can show the greatest potential in proportion to the field total leads in percentage runs in the ratio of its rated possible production to the whole.

When prorating was begun, Oct. 1, last, the Mid-Kansas & Transcontinental partnership had more than 75 per cent of the 30,000 barrels daily market outlet then provided by the Humble. Two weeks later, the proportion of the partnership had dropped to roundly 57 per cent, due to important well completions of other companies.

As of Nov. 1, last, when the market outlet was increased to 37,000 barrels daily, through part operation of the Illinois pipeline, the Mid-Kansas & Transcontinental percentage had been cut below 50 per cent because of the increased potential incident to completion of additional big wells, mainly by other companies. Now the partnership wells, with roundly 239,000 barrels potential, approximate 54 per cent of the field potential.

Next after the Mid-Kansas & Transcontinental, in terms of rated daily potential based on 1-hour gauges, come the California Co., with approximately 82,000 barrels; McMan Oil & Gas Co., operating properties in which the Marland Oil Co. of Texas owns a half interest, roundly 39,000 barrels; Simms Oil Co., about 30,000 barrels; Marland Oil Co. of Texas, operating on its own account, roundly 20,000 barrels.

Humble Oil & Refining Co., Roxana Petroleum Corp., Gulf Production Co., Allsman & Bell, and two or three minor operators, have in each individual case less than 6,500 barrels daily potential.

CRUDE produced by companies operating in the field must now move through either the Humble or the Illinois pipelines, which constitute the only present outlets. Roxana and Gulf are both building short pipelines from the field to the Kansas City, Mexico & Orient railroad, about 25 miles northwest, in the McCamey district. Roxana has announced it will share its line to the extent of its outgoing movement of crude in conformity with the pro-rating committee percentage schedules. Gulf has made no official statement of its plans, but is authoritatively known to be building its line and a 50-car loading rack for "protective purposes."

A feeling that the Gulf will continue sympathetic, although not actually subscribing to the plan, was voiced at Fort Worth last week by W. A. Moncrief, chairman of the prorating committee, in a short talk before the Texas division of the Mid-Continent Oil & Gas Association on the Pecos situation.

The Gulf's construction work had previously caused a flurry of rumors to take wings, the impression becoming prevalent in some quarters that its attitude might not continue sympathetic. However, it has been no more active in development than others and its present potential is among the lowest of the big operators in the field.

IT IS anybody's guess what the Yates field will produce ultimately. Any number of unmeasured possibilities may come into the picture to upset estimates, because of various peculiarities in the situation as a whole. Anything from 140,000,000 barrels, ultimate recovery, up to 500,000,000 barrels may be considered intelligent guessing; but the lower figures mentioned are so ultra-conservative that they may now be discarded as too low.

Original estimates made by the writer assumed an average recovery of 20,000 barrels per acre, minimum, from 7,000 acres of productive ground. The estimate was made at a time when only a few wells had been drilled and field limits could not be defined.

Some time later, in issuing a call for organization of Yates field producers into a pro-rating committee, President W. S. Farish of Humble Oil & Refining Co. gave his company's estimate as 255,000,000 barrels, ultimate recovery, but did not issue figures on probably productive acres.

Since that time development has provided structural knowledge indicating a minimum of 10,000 productive acres and some companies project field lines outward far enough to include from 15,000 to 17,000 acres.

ENGINEERS studying Yates field sub-surface data for the pro-rating committee are agreed on a minimum of 10,000 acres to prove productive. What recovery estimate they will reach is yet to be determined, but it will take account of much new information shown by development subsequent to the setting up of earlier yield figures.

The presence of a hydrostatic water head back of the oil, and down the flanks of the structure, will be a factor now to be given major consideration in estimating ultimate yield.

Assuming a well controlled water drive, based on successful continuance

of the present pro-rating plan, a minimum of 50 per cent of the oil in the pay horizon should be recovered ultimately. In some fields where water has been an influence in flushing the pay horizon for maximum yields the recovery has been as much as 80 per cent. Technologists have estimated in the past that recoveries in other fields run as low as 20 to 25 per cent of the oil in the horizon under conditions where the flushing influence of water back of the oil is missing.

Allowing only for a 50 per cent recovery of the oil in the horizon, recognizing an average pay thickness throughout the field of 50 feet and assuming a porosity of 25 per cent, then the Yates field conceivably might produce 500,000,000 barrels of crude. The average penetration of the nearly 50 wells drilled to date has been more than 50 feet and a porosity of 25 per cent is conservative.

None will contend that the present rated daily potential of 447,254 barrels could be maintained with all wells flowing wide open at their estimated 24-hour maximums. It is probable, however, that they would yield 300,000 barrels daily, on open flow, for a time. Were such a producing policy possible, and in effect, drilling would be proceeding pell-mell and restraint would be impossible. Such a situation is outside the picture, however, because of general market conditions in addition to a lack of physical outlets.

Months would be required to build pipelines adequate to handle the oil under such development conditions as mentioned and the investment necessary for providing such facilities would perhaps total the value at the present market of the oil to be produced. It is a fact, however, that with room for 950 additional wells inside the known field boundaries, spaced on a basis of one well to 10 acres, the Yates field could have been developed so as to run up production to 1,000,000 barrels daily had there been demand for the oil and physical outlets permitting its transport.

That such a development would have constituted ruinously unnecessary drilling, expensive production methods, lowered ultimate production and unthinkable pipeline investment goes without saying. Continuance of present practice will avoid most of the disadvantages mentioned. It is interesting to paint such a picture, however, to show how the situation as it now stands represents reasonable co-operation of companies and individual restraint.

Under Texas law operating companies may not agree to restrict production, but when they pro-rate runs equitably according to market outlet they accomplish similar advantages, especially in a sulfur crude area where it is the desire of all to run their crude currently and not build up above-ground storage stocks.

Shreveport Refinery is Sold To Pipeline Company

D. H. CHRISTMAN

Staff Special

HOUSTON, Nov. 18

STOCK control of the Shreveport Producing & Refining Co., a $10,000,000 corporation, has been purchased by the Shreveport-El Dorado Pipeline Co., which operates a system connecting the North Louisiana district with the South Arkansas producing territory.

Announcement of the sale was made by J. B. Atkins, vice president and general manager of the S. P. & R. Co., who said the deal involved the transfer of more than 667,000 shares of the $10 par stock.

The S. P. & R. Co. has been operating 5,000 barrels skimming and 2,500 barrels Dubbs and Jenkins cracking capacity at its Jewell plant, just outside the city limits of Shreveport. Present plans call for increasing the capacity of the plant to 10,000 barrels.

D. H. Christman, for years refinery superintendent of the Crystal Oil Refining Corp., has resigned to take the superintendency of the refinery of the Shreveport Producing & Refining Corp. He will be in charge of the work of increasing the capacity of the plant.

Mr. Christman is one of the best known refinery operating men in the southwest, having been for about 15 years with the Caddo Oil Refining Co. which was reorganized some years ago as the Crystal Oil Refining Corp.

K. E. Merren is president, C. P. Clayton vice president, and B. H. Gray secretary-treasurer of the Shreveport-El Dorado Pipeline Co.

* * *

SHREVEPORT, Nov. 19.—John J. Thomas has been named acting superintendent of the Crystal Oil Refining Corp. refinery here, succeeding D. H. Christman, who resigned recently to become refinery superintendent for the Shreveport Producing & Refining Corp.

Mr. Thomas is an Oklahoma University and Columbia University graduate, and prior to joining the Crystal organization was assistant to the superintendent of the natural gasoline department of the Skelly Oil Co.

Work's Committee To Organize Dec. 3

(*Continued from Page* 24)

passed on the committee's previous report in which state legislation was indorsed. It also is probable that lengthy consideration and debate may be given the conservation question at the directors' meeting. The committee of seven will meet Friday, Dec. 2, at Chicago. The general sessions of the institute begin Dec. 6.

Mark L. Requa is drafting a bill which will be introduced in the next session of the Congress which convenes Monday, Dec. 5. It is understood he has several features to work out before the draft will be complete. He is planning conferences with oil industry leaders in Houston, Tulsa, Chicago, New York and Washington.

Mr. Requa, it is understood, will pave the way for the introduction of his bill with several articles he has written on the general subject of mineral conservation.

Secretary Work had no comment to offer on Mr. Clark's letter in which the A.P.I. president wrote: "I understand that whatever its (committee of nine) report may be there will be entire liberty on the part of all concerned to judge the report on its merits without any implication that the appointment of members of the committee will constitute a commitment on any questions of law or of policy involved."

It is probable that after organizing the Work committee of nine will adjourn until after the meeting of the A.P.I. in Chicago Dec. 6, 7 and 8. However, organization may give the A.P.I. directors some idea of what course the committee of nine will pursue in its study of conservation law needs.

Tycos Instruments for ALL Applications

Here are a number of Tycos Industrial Thermometers on the compressor discharge lines at a large Mid-Continent Natural Gasoline plant.

This is but one use for *Tycos* temperature instruments in the oil business. There are hundreds of others for in few other industries are the uses of heat so diversified and so important.

Tycos temperature instruments have rendered excellent service for oil operators all over the world. They have been called upon to handle every temperature requirement. It is with confidence, therefore, that we recommend these sturdy, reliable instruments for your refinery.

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INDICATING - RECORDING - CONTROLLING

Wholesale Prices Move Upward in October

WASHINGTON, Nov. 19.—A slight continued upward movement of wholesale prices is shown for October by information collected in representative markets by the bureau of labor statistics of the U. S. Department of Labor. The bureau's revised index number, computed on prices in the year 1926 as the base including 550 commodities or price series, stands at 97.0 for October as compared with 96.5 for the month before, a rise of ½ of 1 per cent. Compared with October, 1926, however, with an index number of 99.4, a decrease of nearly 2½ per cent is shown.

Farm products declined somewhat from the September price level, due mainly to decreases in corn and cotton. Cattle, eggs, hay, and wool on the other hand averaged higher than in the preceding month.

Foodstuffs rose sharply in price, with increases reported for butter, cheese, fresh and cured meats, coffee, and rye flour. Small increases took place in the groups of hides and leather products and chemicals and drugs.

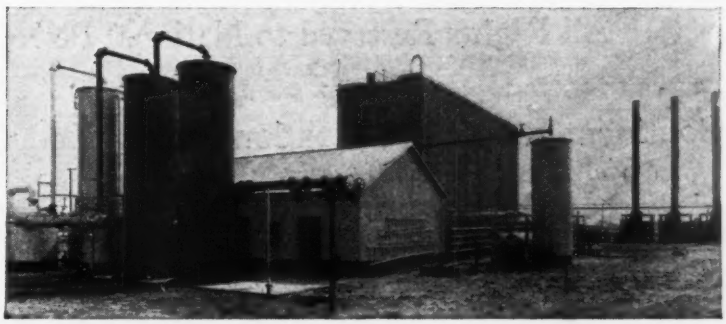
Practically no change in the price level is shown for textile products and housefurnishing goods, while slight decreases are shown for fuel and lighting, metals and metal products, building materials and miscellaneous commodities.

Of the 550 commodities or price series for which comparable information for September and October was collected, increases were shown in 165 instances and decreases in 139 instances. In 246 instances no change in price was reported.

Comparing prices in October with those of a year ago, as measured by changes in the index numbers, it is seen that farm products and hides and leather products were considerably higher, while textile products were slightly higher. Decreases are shown for all other groups of commodities, ranging from less than 1 per cent in the case of foods and housefurnishing goods, to 8 per cent in the case of building materials, and 17 per cent in the case of fuel and lighting.

Builds New Syracuse Terminal

SYRACUSE, Nov. 21.—A new terminal with storage capacity of approximately 20,000 barrels, a combination warehouse and office and a one-story garage is being constructed by the Beacon Oil Co. here. The plant will be on Hiawatha street fronting on the barge canal. Shipments will be received by barge and by railroad. It is expected that the terminal will be completed late this year.



A Typical Campbell Installation

8 advantages of Campbell Oil-Froth Absorbers

1. Obtain the greatest possible intimacy between gas and absorption oil.
2. Allow a high saturation of the oil, thus cutting plant costs and simplifying operation.
3. Operate effectively on as low as one-fourth of normal gas load, and as high as twice normal load without carrying-over absorption oil.
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Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended November 18 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Nov. 18	Total Week Ended Oct. 21
Plants Reporting	12	28	27	12	79	124
Crude Capacity (bbls.)	92,000	157,200	104,500	54,900	408,600	470,000
Cracking Capacity	30,700	52,600	16,200	22,700	122,200	110,750
Da. Av. Crude Runs	54,530 — 13.6	103,218 + 0.4	65,660 — 4.7	38,357 — 10.6	261,765 — 5.8	269,923
Da. Av. Other Oils	6,775 — 1.6	644 — 83.1	6,390 + 11.0	1,587 — 21.0	15,396 — 6.6	13,323
GASOLINE—Gallons						
Stocks, Nov. 11	8,654,000	30,229,000	17,764,000	4,851,000	61,498,000	60,444,000
Prod. 11-11 to 11-18	8,491,000 — 10.2	17,076,000 + 7.9	8,873,000 + 12.4	3,525,000 — 0.9	37,965,000 + 3.4	37,417,000
Ship. 11-11 to 11-18	7,684,000 — 9.7	15,550,000 + 2.1	8,983,000 + 18.1	3,823,000 + 24.8	36,040,000 + 4.8	36,000,000
Stocks, Nov. 18	9,461,000 + 9.3	31,755,000 + 5.0	17,654,000 — 0.6	4,553,000 — 6.1	63,423,000 + 3.1	61,861,000
Ratio Sales to Prod.	90.5%	91.1%	101.2%	108.5%	94.9%	96.2%
KEROSENE—Gallons						
Stocks, Nov. 11	3,559,000	6,707,000	1,359,000	411,000	12,036,000	11,480,000
Prod. 11-11 to 11-18	1,514,000 — 1.7	3,071,000 — 1.9	1,425,000 + 7.0	771,000 + 42.8	6,781,000 + 3.6	6,414,000
Ship. 11-11 to 11-18	1,418,000 + 11.6	2,779,000 + 2.4	1,301,000 + 21.7	547,000 + 3.4	6,045,000 + 8.3	6,565,000
Stocks, Nov. 18	3,655,000 + 2.4	6,999,000 + 4.4	1,483,000 + 9.1	635,000 + 54.5	12,772,000 + 6.1	11,329,000
Ratio Sales to Prod.	93.7%	90.5%	91.3%	70.9%	89.1%	102.4%
STOVE DISTILLATE—Gallons						
Stocks, Nov. 11	4,964,000	6,977,000	2,247,000	55,000	14,243,000	13,402,000
Prod. 11-11 to 11-18	304,000 + 2.0	609,000 + 0.2	243,000 — 50.4	..... —100.0	1,156,000 — 19.5	1,425,000
Ship. 11-11 to 11-18	431,000 + 3.1	679,000 — 42.4	306,000 — 12.6	24,000 + 14.3	1,440,000 — 26.8	832,000
Stocks, Nov. 18	4,837,000 — 2.6	6,907,000 — 1.0	2,184,000 — 2.8	31,000 — 43.6	13,959,000 — 2.0	13,995,000
Ratio Sales to Prod.	141.8%	111.5%	125.9%		124.6%	58.4%
GAS OIL—Gallons						
Stocks, Nov. 11	8,985,000	41,011,000	18,070,000	9,002,000	77,068,000	74,315,000
Prod. 11-11 to 11-18	1,536,000 — 10.5	1,744,000 — 18.3	945,000 — 8.8	2,081,000 + 29.6	6,306,000 — 2.9	5,777,000
Ship. 11- to 11-18	1,489,000 — 6.7	1,070,000 — 35.6	459,000 — 31.7	2,441,000 + 99.8	5,459,000 + 6.0	5,254,000
Stocks, Nov. 18	9,032,000 + 0.5	41,685,000 + 1.6	18,556,000 + 2.7	8,642,000 — 4.0	77,915,000 + 1.1	74,838,000
Ratio Sales to Prod.	96.9%	61.4%	48.6%	117.3%	86.6%	90.9%
FUEL OIL—Gallons						
Stocks, Nov. 11	16,636,000	45,885,000	33,149,000	10,319,000	105,989,000	104,623,000
Prod. 11-11 to 11-18	6,063,000 — 13.7	6,459,000 — 10.5	3,642,000 + 0.4	5,799,000 — 20.7	27,963,000 —10.2	27,556,000
Ship. 11-11 to 11-18	6,311,000 + 6.9	8,109,000 + 4.9	8,940,000 + 1.9	8,145,000 + 16.2	31,505,000 + 7.1	26,405,000
Stocks, Nov. 18	16,388,000 — 1.5	44,235,000 — 3.6	33,851,000 + 2.1	7,973,000 — 22.7	102,447,000 — 3.3	105,774,000
Ratio Sales to Prod.	104.1%	125.5%	92.7%	140.5%	112.7%	95.8%

Gasoline Produced by Various Methods, Week Ended November 18

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	5,154,000	60.7	12,640,000	74.0	7,398,000	83.4	1,672,000	47.4	26,864,000	70.7
Cracked	1,567,000	30.2	2,873,000	16.8	1,253,000	14.1	1,268,000	36.0	7,961,000	21.0
Natural	770,000	9.1	1,563,000	9.2	222,000	2.5	585,000	16.6	3,140,000	8.3
Total	8,491,000		17,076,000		8,873,000		3,525,000		37,965,000	

+ or — columns are % changes over previous week.

Gasoline Shipments Increase but Stocks Rise

Staff Special—By Telegraph
TULSA, Nov. 22

STOCKS of gasoline at 79 refineries that have 60 per cent of the operating capacity of the Mid-Continent were increased approximately 2,000,000 gallons in the week ended Nov. 18, according to reports to NATIONAL PETROLEUM NEWS. Stocks Nov. 18, were 63,423,00 gallons on approximately 12.3 days' supply at the present rate of shipment.

Gasoline shipments were 36,040,000 gallons compared with 34,403,000 gallons the week before. Production was 37,965,000 gallons, an increase of 3.4 per cent over the previous week's production.

Crude runs to stills of reporting plants were reduced 16,000 barrels daily average from runs the week ended Nov. 11, to 261,765 barrels a day. Charges of partly refined oils

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Nov. 18. Change in stocks figured from Nov. 18.

GASOLINE

	Gallons
Production	145,586,000
Shipments	145,973,000
Net change in stocks	— 387,000
Ratio sales to production	100.3%

KEROSENE

	Gallons
Production	25,243,000
Shipments	23,800,000
Net change in stocks	+ 1,443,000
Ratio sales to production	94.3%

STOVE DISTILLATE

	Gallons
Production	5,327,000
Shipments	5,363,000
Net change in stocks	— 36,000
Ratio sales to production	100.7%

GAS OIL

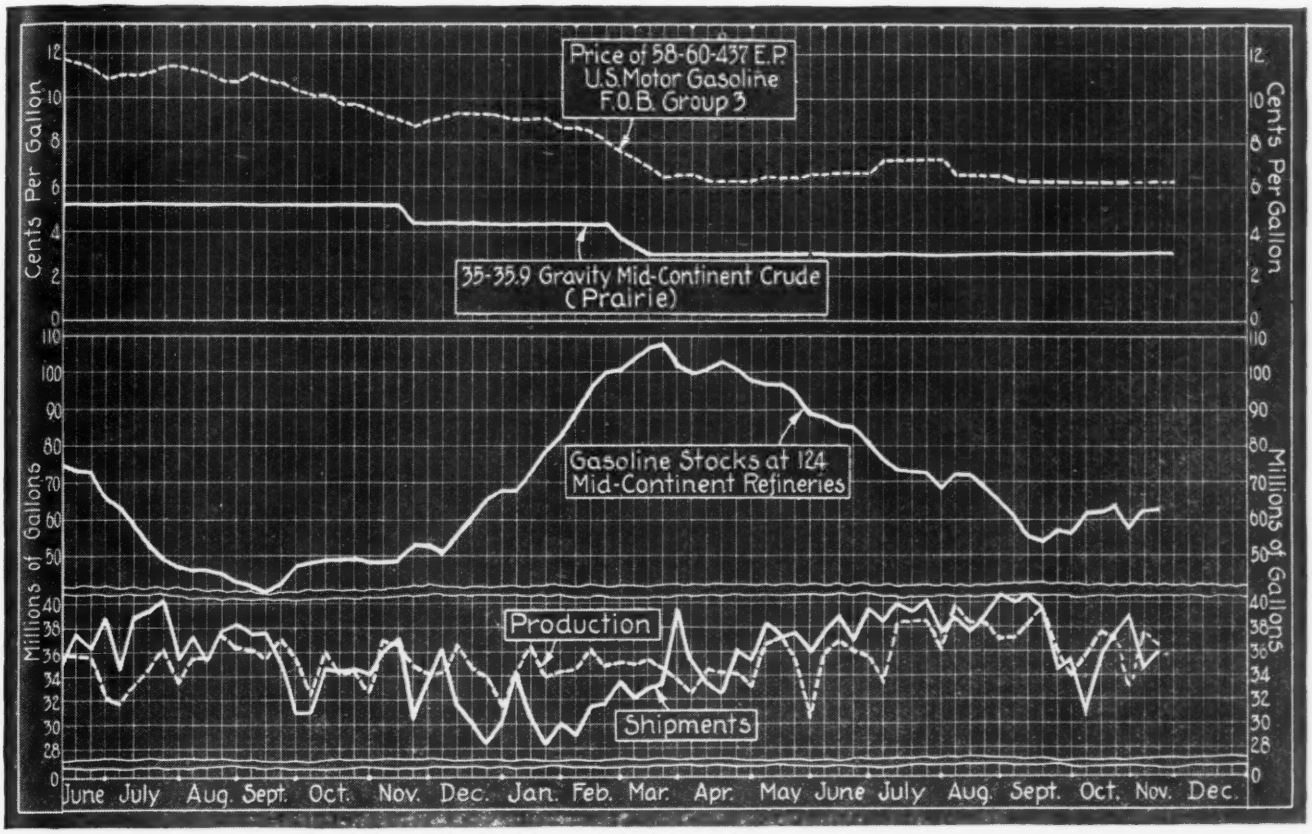
	Gallons
Production	28,572,000
Shipments	25,495,000
Net change in stocks	+ 3,077,000
Ratio sales to production	89.2%

FUEL OIL

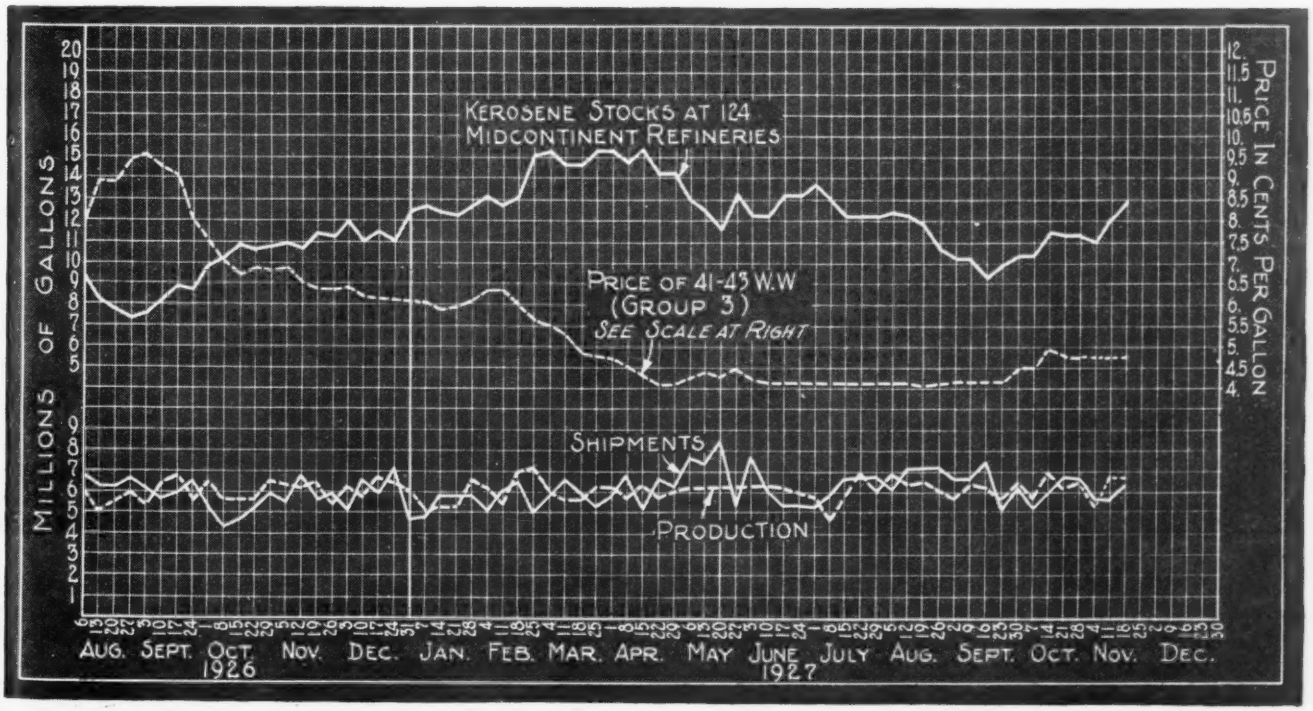
	Gallons
Production	110,990,000
Shipments	114,663,000
Net change in stock	— 3,673,000
Ratio sales to production	103.3%

Barometer of Mid-Continent Refinery Market—Week Ending November 18

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News

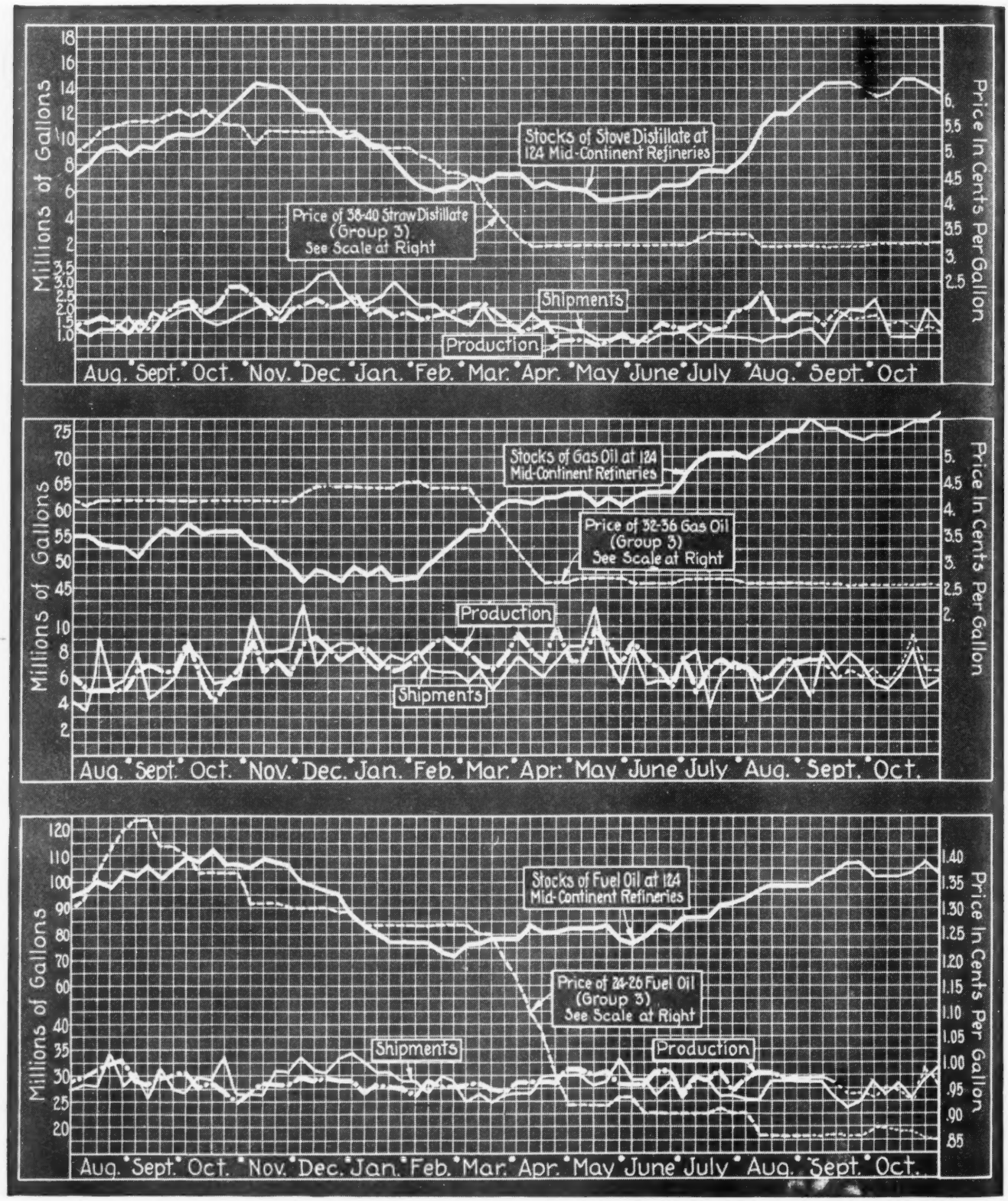

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at 124 Mid-Continent Refineries
Millions of Gallons
Production
Shipments
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page


KEROSENE STOCKS AT 124 MIDCONTINENT REFINERIES
PRICE OF 41-43 W.W (GROUP 3)
SEE SCALE AT RIGHT
SHIPMENTS
PRODUCTION
MILLIONS OF GALLONS
PRICE IN CENTS PER GALLON
AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.
1926
1927

Barometer of Mid-Continent Refinery Market—Week Ending November 18

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News

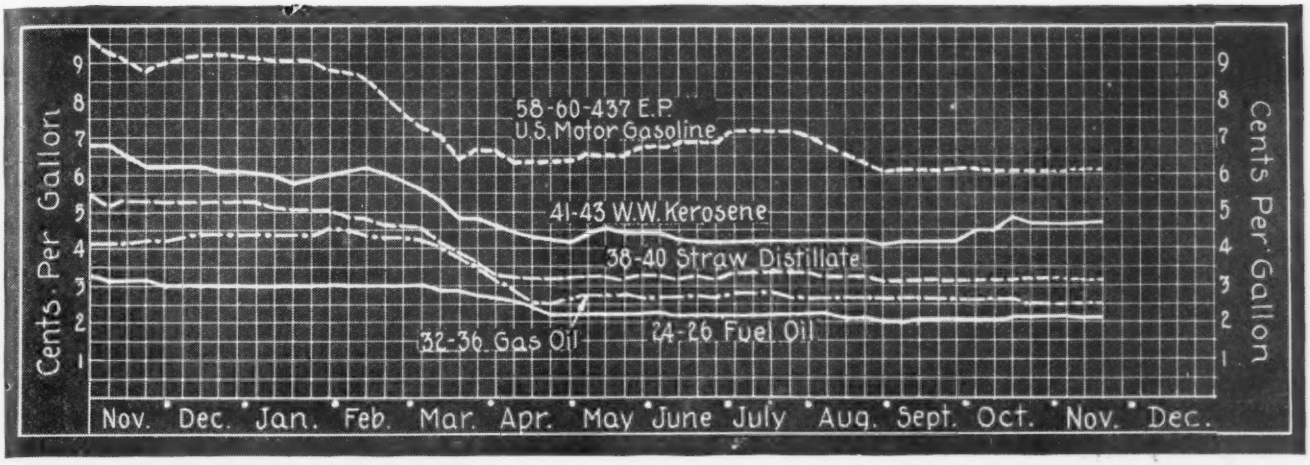

Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at 124 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at 124 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.
Millions of Gallons
Price In Cents Per Gallon
Stocks of Fuel Oil at 124 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.

were reduced 3,000 barrels daily average to 15,396 barrels a day.

The heaviest reduction in crude runs, 9,000 barrels daily average, was reported by Kansas refineries. Oklahoma plants reported an increase of about 500 barrels in average runs. Texas plants reduced runs 3,000 barrels daily average and north Louisiana and Arkansas plants reduced runs 4,500 barrels daily average.

The report indicates refiners were running lighter crude since the yields of gasoline and kerosene were larger and production of stove distillate, gas oil and fuel oil smaller without a material change in cracking. More natural gasoline was used in blending

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables in Market Section of this Issue

which increased the volume of finished motor fuel produced.

Shipments of kerosene increased about 500,000 gallons to 6,045,000 gallons. Production increased about 200,000 gallons to 6,781,000 gallons. Stocks increased 736,000 gallons to 12,772,000 gallons.

Stove distillate business continued brisk and refiners were forced to draw about 300,000 gallons from reserves. Stocks Nov. 18 were 13,959,000 gallons, compared with 14,131,000 gallons at the same plants Nov. 18, 1926.

Fuel oil business increased 7.1 per cent to 31,505,000 gallons. Refiners reduced output of fuel oil 10.2 per cent to 27,963,000 gallons. Stocks were lowered 3,500,000 gallons of 3.3 per cent to 102,447,000 gallons. Fuel stocks were reduced in all fields except north and central Texas where there was an increase of about 700,000 gallons.

Gulf Coastal Lubes Reduced ½ Cent

Staff Special

HOUSTON, Nov. 18.—Unsettlement in the Gulf Coastal lubricant market reflects the meeting of competition by goods moved into the trade territory from outside manufacturing centers. An important Atlantic seaboard refiner which markets direct from a newly established terminal base on the Texas Gulf Coast is cutting into the southwestern business of the Houston district plants, which have been forced to lower prices an average of about ½ cent a gallon on red and pale oils.

Shipments of zero cold test grades from the Houston district to northern consuming territories have increased with the approach of winter weather, as previously reported, but not to the same extent as in similar periods of other years.

Price changes on Gulf Coastal lube oils for Nov. 21 reached here too late to include in the refinery market tables on pages 99 and 101 of this issue. Correct prices for Nov. 21 are:

100 vis. No. 2 color, Unfilt. Pale	6.50- 7.00
200 vis. No. 3 color, Unfilt. Pale	9.00- 9.50
300 vis. No. 3 color, Unfilt. Pale	10.00-10.50
500 vis. No. 3½ color, Unfilt. Pale	12.00-12.50
750 vis. No. 4 color, Unfilt. Pale	14.00-14.50
200 vis. No. 5½ color, Red Oil	7.50- 8.00
300 vis. No. 5½ color, Red Oil	8.50- 9.00
500 vis. No. 6 color, Red Oil	10.00-10.50
750 vis. No. 6 color, Red Oil	12.50-13.00
Gulf Coastal fuel (bbl.)	1.50- 1.55
Gulf Coastal gas oil (gal.)	4.375-4.50

Coast Refineries Draw All Crude from Distance

WASHINGTON, Nov. 12.—The Atlantic coast states, which refine enormous quantities of petroleum, depend upon other domestic and foreign sources for 98.3 per cent of the crude oil put through their refineries, the United States Bureau of Mines points out in a report just issued. Oil production in western Pennsylvania and New York furnish 1.70 per cent of the crude oil refined in these states. Of the gasoline consumed, including exports, 47 per cent is refined outside of this group of states, while 47.2 per cent of the gas oil and fuel oil delivered in the region comes from outside refineries.

Total Atlantic coast runs to stills of domestic and foreign crude oil in 1926 were 2,310,000 barrels larger than in 1925, states E. B. Swanson, economic analyst, in Information Circular 6050. This increase is a balance between a decrease of 3,253,000 barrels in the quantity of domestic crude oil refined and an increase of 5,563,000 barrels in the amount of foreign crude oil refined during 1926, as compared with 1925. Total Atlantic coast receipts of domestic crude oil during 1926 were slightly larger than in 1925, being 103,056,000 barrels as compared with 102,798,000 barrels in 1925. The larger refinery runs of domestic crude oil in 1925 were due to the fact that 3,303,000 barrels were withdrawn from refinery storage during 1925 to augment the quantities received, while during 1926, 805,000 barrels were added to storage.

WINCHESTER, Mass.—The Pull-A-Plug is a new electric attachment placed on the market by Ren Mfg. Co. here, which has been developed to prevent frayed electric wires, burnt-out fuses, broken plug-caps on electric attachments. The Pull-A-Plug serves as a shield and protects the plug cap from breakage.

GET TOP PRICES

Color your anti-knock or high test gasoline an attractive shade by which the public will remember your good product and pay you best prices.

DYKEM GASOLINE COLORS !

Made especially for gasoline

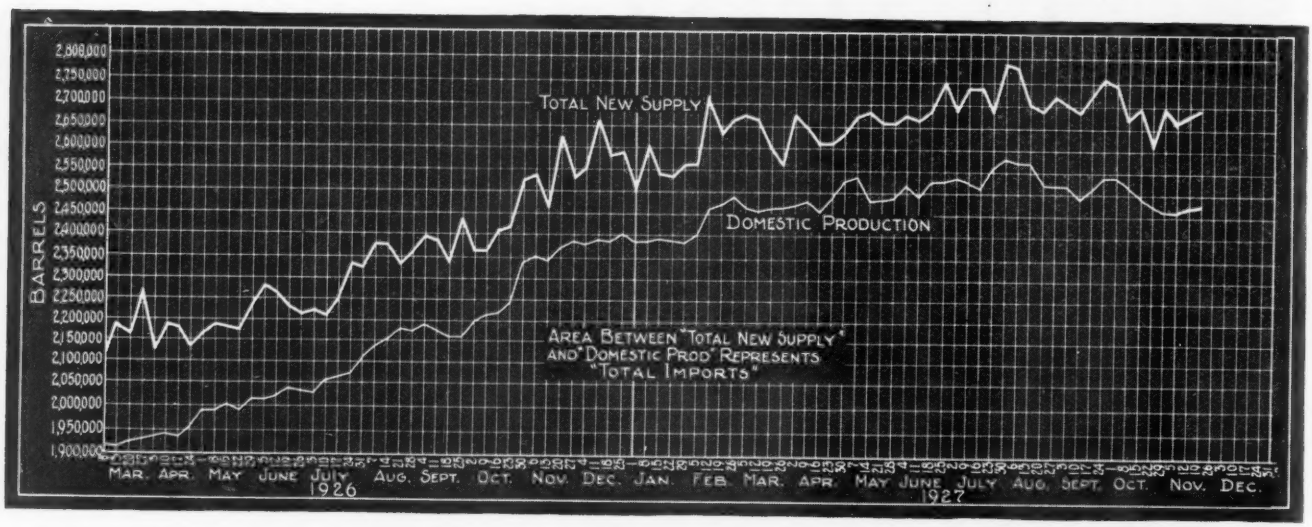
BLUE GREEN PURPLE RED

Write for price and sample of shade you prefer.

DYESTUFFS & CHEMICALS, Incorporated

11th & Monroe Sts. St. Louis, Mo.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Nov. 19	No. 12
Production east of Rockies	1,842,850	1,849,000
Decrease		6,150
Total production in U. S.	2,466,950	2,469,500
Decrease		2,550
Crude oil imports	218,286	214,714
Increase		3,572
Total crude supply	2,685,236	2,684,214
Increase		1,022

OKLAHOMA

	Nov. 19	Nov. 12
North Braman	2,800	2,900
South Braman	2,100	2,100
Blackwell	3,900	3,900
Hubbard	3,500	3,500
Thomas	2,200	2,200
Tonkawa	16,600	16,750
Garber	10.000	10,200
Burbank	38,750	39,350
Osage, outside Burbank	30,500	30,500
Watchorn	1,700	1,700
Cushing	21,300	21,250
Yale Jennings	9,550	9,550
Davenport	2,700	2,750
Bristow-Slick	24,950	24,950
North Okmulgee	16,200	16,200
Lyons-Deaner	6,300	6,350
Stroud	1,250	1,250
Cromwell	11,150	11,250
Papoose	6,050	5,800
Wewoka	11,400	12,200
Seminole	60,250	61,850
Bowlegs	129,500	127,200
Searight	26,700	26,300
Little River	44,850	44,500
Earlsboro	161,200	162,500
Duncan district	6,800	6,800
Graham	6,450	6,500
Fox	1,950	1,900
Healdton	14,700	14,800
Hewitt	9,400	9,200
Scholem Alechem	12,500	13,000
Others	71,150	69,750
Total, Oklahoma	768,350	768,950
Decrease		600

KANSAS

Greenwood County	32,400	32,750
Florence-Covert	1,500	1,500
Peabody-Elbing	3,900	3,850
Eldorado-Towanda	14,250	14,300
Augusta-Fox-Bush	4,200	4,250
Rainbow Bend	2,250	2,400
Russell	2,600	2,600
Churchill	13,000	13,850
Others	31,800	32,300
Total, Kansas	105,900	107,800
Decrease		1,900

NORTH LOUISIANA

Homer	4,700	4,700
Haynesville	6,950	6,950
Caddo, Light	12,600	13,050
Caddo, heavy	4,400	4,350
De Soto, Red River	4,050	4,000
Elm Grove	650	700
Bellevue	1,050	1,050
Cotton Valley	5,100	5,100
Urania	9,150	9,100
Pleasant Hill	850	1,050
Total, North Louisiana	49,500	50,050
Decrease		550

ARKANSAS

El Dorado	6,000	6,000
Smackover, light	9,700	9,800
Smackover, heavy	74,000	75,350
Stephens	1,200	1,200
Nevada	3,750	3,950
Lisbon	2,750	2,750
Others	100	100
Total, Arkansas	97,500	99,150
Increase		1,650

TEXAS (OUTSIDE GULF COAST)

Panhandle District

Hutchinson County	59,150	60,900
Carson County	7,600	7,600
Gray County	14,300	14,800
Wheeler County	1,450	1,200
Others	50	50
Total, Panhandle District	82,550	84,550
Decrease		2,000

North Texas

Burkburnett	12,400	12,500
Electra	12,200	12,300
Iowa Park and K-M-A	2,000	2,000
Wilbarger	11,300	11,150
Archer County	23,700	23,450
Montague-Cooke	16,100	16,200
Others	700	700
Total, North Texas	78,400	78,300
Increase		100

West Central Texas

Stephens County	8,000	8,050
Eastland-Desdemona	8,300	8,400
Brown County	19,050	19,250
Coleman County	1,250	1,200
Callahan County	3,950	3,850
Shackleford County	5,200	5,150
Young County	9,700	9,800
Throckmorton County	1,300	1,250
Palo Pinto County	500	500
Others	1,300	1,350
Total, West Central Texas	58,550	58,800
Decrease		250

West Texas

Jones County	1,650	1,600
Mitchell and Scurry Counties	3,450	3,450
Howard County	4,300	4,300
Reagan County	22,700	22,350
Crane and Upton Counties	123,900	129,450
Crockett County	2,350	2,300
Pecos County	42,150	35,950
Winkler	17,650	17,250
Others	2,700	2,600
Total West Texas	220,850	219,250
Increase		1,600

East Central Texas

Mexia	8,500	8,850
Currie	600	600
Richland	700	700
Wortham	2,500	2,550
Corsicana-Powell	13,600	13,300
Nigger Creek	2,450	2,650
Total, East Central Texas	28,350	28,650
Decrease		300

Southwest Texas

Luling	14,750	14,900
Lytton Springs	1,600	1,400
Somerset	850	850
Laredo District	7,950	8,000
Piedras Pintas	.....	500
Dale	400	.....
Others	400	400
Total, Southwest Texas	25,950	26,050
Decrease		100
Total, Texas—(Outside Gulf Coast)	494,650	495,600
Decrease		950

GULF COAST

Coastal Texas

West Columbia	9,100	9,200
Damon Mound	900	900
Big Creek	3,050	3,350
Boling	2,250	2,250
Blue Ridge	5,500	4,000
Pierce Junction	10,800	10,500
Humble	1,900	1,900
Goose Creek	7,850	7,900
South Liberty	2,500	2,300
Hull	14,950	15,100
Saratoga	1,050	1,000
Batson	1,300	1,300
Sour Lake	3,950	3,900
Spindletop	48,600	50,500
Orange County	4,400	4,400
Others	4,550	4,650
Total, Coastal Texas	122,650	123,150
Decrease		500

Coastal Louisiana

Vinton	4,700	4,850
Lockport	5,950	5,650
Evangeline	1,300	1,400
Edgerly	2,400	2,700
Others	1,250	1,450
Total, Coastal Louisiana	15,600	16,050
Decrease		450
Total Gulf Coast	138,250	139,200

ROCKY MOUNTAIN

Wyoming

Salt Creek	34,600	33,300
Grass Creek	2,650	2,550
Elk Basin	1,000	1,050
Big Muddy	2,750	2,850
Lost Soldier	2,600	2,550
Rock River	2,650	2,550
Lance Creek	1,300	1,250
Teapot Dome	.....	1,100
Others	3,750	3,750
Total, Wyoming	51,300	50,950
Increase		350

Montana

Cat Creek	1,950	1,950
Sunburst	11,500	11,500
Others	250	250
Total, Montana	13,700	13,700

Colorado

Moffat (Craig)	1,450	1,250
Port Collins	2,950	2,800
Florence	800	950
Others	1,300	1,450
Total, Colorado	6,500	6,450
Increase		50

New Mexico

Table Mesa	.....	.....
Artesia	1,250	1,250
Hogback	700	350
Rattlesnake	150	450
Others	100	100
Total N. Mexico	2,200	2,150
Increase		50
Total, Rocky Mountain	73,700	73,250
Increase		450

California

Santa Fe Springs	39,000	39,000
Long Beach	104,000	100,000
Huntington Beach	61,000	62,000
Torrance	20,000	20,000
Dominguez	14,800	14,800
Rosecrans	8,000	7,800
Inglewood	32,000	32,500
Midway-Sunset	83,000	83,000
Ventura Avenue	52,300	52,400
Seal Beach	50,000	50,000
Others	160,000	159,000
	50,000	50,000
Total California	624,100	620,500
Increase		3,600

Eastern

(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	115,000	115,000

Another Week Passes and Seminole Big Drop Does Not Materialize

By Lawrence E. Smith

N. P. N. STAFF WRITER

TULSA, Nov. 19

ANOTHER week has gone by and the expected big drop in Seminole production has not occurred. The district ended the week with an even 1,000 wells and a production from these of 422,272 barrels. There were 23 completions during the week and a loss in daily averages, from Nov. 10 to Nov. 18, of 6,743 barrels. Of this loss, 6,552 barrels was in the Earlsboro pool. Small gains in the Searight and Bowlegs pools offset losses in Little River and Seminole proper.

The expected drop cannot be far off, for a sizeable amount of the flush production within the past month has come from old wells that were given small shots. The effect is temporary, but it makes an imposing showing for a few days.

Considerable drilling is yet to be done. A census of the operations within defined or partially defined territory of the five pools shows 205 drilling wells. Of these 4 are in the old Seminole field; 17 in Searight; 58 in Bowlegs; 76 in Earlsboro, and 50 in Little River. At least half of them should be completed by Jan. 1.

The crude oil situation in the Mid-Continent is still tight. Little new oil is being found in any part of the territory except the Seminole district. Inquiries come in number to those who have oil in storage and there is a fair measure of competition when something new is found. The owners of the Oliphant well, in 20-27-6, east extension of the Burbank field, were solicited by several refiners when they brought in the big well three weeks ago. One or two small premium offers were reported.

This well, which supplies the necessary spur to bidders at the forthcoming Osage sale, continues to put better than 3,000 barrels into the tanks each 24 hours. The Oliphant two-thirds interest was sold the past week to the Prairie Oil & Gas Co., for $733,333, or on the basis of $1,100,000 for the entire working interest in the property, Stanley and Voyles, of Pawhuska, each retain a sixth interest. Mr. Oliphant thus has some new money to be used in indulging his fancy for low priced Osage leases.

Seminole operations were featureless during the week. The three new pools, happy to relate, are still shut in to the 100 barrels per well stipulated in the order of the corporation commission. No new drilling has been started around any of them.

SEVERAL interesting tests in the Seminole area were completed as failures during the week. The Independent Oil & Gas Co.'s No. 1 Harber, in the NE of 32-9-5, southwest of Earlsboro, found top of the Wilcox at 4835 feet and at the end of the week was drilling at 4853 feet with 3,000 feet of water in the hole. Better than a mile east of this one, Empire Gas & Fuel Co.'s No. 1 Karr, in the NW SW of 34-9-5, found the top of the Wilcox at 5038 feet and was a hole full of water at 7 feet in.

Sorry & Schwartz's No. 1 Turner, SE SW SE of 26-10-5, north of Earlsboro, was finally finished as a failure, with the top of the Wilcox at 4,647 feet.

The deep sand extension to the old Allen pool of Pontotoc county continues in the news and the Louisiana Oil Refining Corp. heightened this interest during the week with its well in the NW NE NE of 18-5-8. Sand, a zone in the Savanna series, was found at 2590-2676 feet and the well made an estimated 40 million feet of gas with spray of 100 to 200 barrels of oil daily. In the same area, but across the Canadian river to the north, W. R. Ramsey's No. 1 Smith, NW NE SE of 8-5-8, resumed drilling past the sand found more than a week ago at 2464-2515 feet. the hole standing full of fluid, of which a considerable part is water.

THE Logan county, Okla., country is as interesting as anything in the Mid-Continent, being an unexplored domain. Several tests in the vicinity of the Roxana Petroleum Corp's discovery in 30-19N-4W, are below 5,000 feet depth and not long after the first of the year one or more should reach the level where the Roxana well found production. This well has total depth of 5985 feet and is still flowing around 2,200 barrels per day.

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended November 19, 1927

	Nov. 19 — Week Ended					Nov. 12				
	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	..	10	8	5	23	1	5	8	5	19
Other Osage	9	5	19	5	38	7	8	16	7	38
Bristow-Cushing	8	6	31	6	51	7	3	32	6	48
North Oklahoma	13	9	68	41	131	13	11	58	47	129
South Oklahoma	8	20	115	31	174	8	14	123	30	175
Muskogee	..	8	33	22	63	..	6	42	15	63
Okmulgee-Bristow	7	29	67	16	119	7	30	74	17	128
Tonkawa	1	..	4	2	7	..	..	3	3	6
Seminole Dist	15	16	287	24	342	12	16	305	34	367
Total Oklahoma	61	103	632	152	948	55	93	661	164	973
KANSAS	29	46	124	65	264	29	33	146	58	266
TEXAS										
Central	..	128	197	122	447	..	109	208	122	439
Panhandle	..	96	81	97	274	..	97	83	91	271
N. Central	..	54	99	25	178	..	49	83	31	163
West	..	136	189	124	449	..	133	161	145	439
Laredo	..	1	25	19	45	..	1	25	19	45
Total Texas	..	415	591	387	1,393	..	389	560	408	1,357
GRAND TOTAL	90	564	1,347	604	2,602	84	515	1,367	630	2,595

Completions in North Louisiana and Arkansas, Week Ended November 17, 1927

Company	Well	Location	Depth	Yield
Louisiana—Bossier Parish—Cartersville				
Magnolia Pet. Co.	Z. Roberson No. 1	23-23-12	3077	38M gas
Pine Island—Caddo Parish				
Arkansas Fuel Oil Co.	Bashara No. 2	23-21-15	3900	360 bbls.
Texas Company	Caddo Mineral Lds. Co. 49	23-21-15	3909	225 bbls.
Ouachita Parish				
Hatcher & Evans	Hatcher No. 6	16-19-4E	2209	5M gas
Waskom—Harrison Co., Texas				
Ford et al	Furrh No. 1	E. M. Jenkins HRS	1004	5M gas
C. H. Lyons et al	Bryson No. 4	T. D. Wilson HRS	965	5M gas
R. W. Torrans	Z. E. Vaughan No. 1	Anderson HRS	975	6M gas
A. L. Waller et al	J. M. Bryson No. 1	Anderson HRS	958	4M gas
Arkansas—Nevada County				
Humble O. & R. Co.	R. R. Fairchild No. 2	6-14-20	1197	50 bbls.
Smackover				
Marine Oil Co.	Snyder No. 14	34-15-15	2355	150 bbls.
Exchange Oil Co.	Berg No. 4	4-16-15	2598	8M gas

Seminole District Production by Companies and Leases, November 18 and November 10, 1927

Company	Farm	S.T.R.	Nov. 18th No. Wells	Nov. 18th Prod.	Nov. 10th. No. Wells	Nov. 10th. Prod.
BOWLEGS						
Amerada	Rascoe	15- 8-6	8	4,085	8	3,255
Atlantic	Baker	1- 8-6	4	1,205	4	1,224
Atlantic	Fleet	23- 8-6	4	951	4	1,238
Atlantic	Grayson	12- 8-6	2	1,575	2	1,565
Atlantic	A. Jones	10- 8-6	3	179	3	157
Atlantic	C. Jones	9- 8-6	2	395	2	285
Total Atlantic			15	4,311	15	4,460
Barnsdall	McNac	28- 8-6	1	40	1	40
Barnsdall	Murrow	11- 8-6	4	1,092	4	1,498
Total Barnsdall			5	1,132	5	1,538
Carter	Bowlegs	15- 8-6	3	1,525	3	1,485
Carter	Burden	23- 8-6	2	600	2	135
Carter	Jones	11- 8-6	3	4,810	3	4,455
Carter	Harjoche	15- 8-6	6	1,255	6	1,265
Carter	Hilly	23- 8-6	2	1,155	1	995
Carter	Walker	15- 8-6	2	70	2	495
Carter	Melisse		1	3,260	0	0
Carter	Wise	23- 8-6	12	9,735	12	9,740
Total Carter			31	22,410	29	21,443
Empire	Lacey	15- 8-6	6	911	6	901
Empire	Wise	23- 8-6	2	1,443	2	1,727
Total Empire			8	2,354	8	2,628
Gypsy	Bowlegs	22- 8-6	1	252	1	340
Gypsy	Bradley	9- 8-6	1	50	1	67
Gypsy	Brown	33- 8-6	1	52	1	100
Gypsy	Dosar	7- 8-6	1	100	1	115
Gypsy	Cumsey	8- 8-6	4	2,032	4	1,755
Gypsy	Grayson	13- 8-6	4	3,157	4	3,560
Gypsy	Henderson		1	335	0	0
Gypsy	Jones	11- 8-6	1	510	1	542
Gypsy	Walker	15- 8-6	8	1,632	8	3,145
Gypsy	Wise	23- 8-6	3	190	3	302
Total Gypsy			25	8,360	24	9,926
Independent et al	Coker	21- 8-6	1	166	1	120
I. T. I. O.	Barnett	24- 8-6	2	845	2	817
I. T. I. O.	Billington	22- 8-6	5	1,001	5	979
I. T. I. O.	Bowlegs	22- 8-6	11	1,536	11	1,745
I. T. I. O.	Burden	8-6	1	0	1	23
I. T. I. O.	Davis	13- 8-6	4	3,142	4	3,610
I. T. I. O.	Fay	18- 8-6	6	5,896	6	5,240
I. T. I. O.	Goforth	15- 8-6	11	1,614	11	2,152
I. T. I. O.	Hull	26- 8-6	1	441	1	0
I. T. I. O.	Livingston	15- 8-6	11	6,092	11	6,737
I. T. I. O.	Lizzie	11- 8-6	2	1,492	2	1,066
I. T. I. O.	Walker	15- 8-6	8	1,351	8	1,525
I. T. I. O.	Wilmont	15- 8-6	4	1,770	4	1,785
I. T. I. O.	Work	24- 8-6	1	48	0	0
I. T. I. O.	Youngblood	22- 8-6	2	237	4	32
Total I. T. I. O.			69	25,425	70	25,711
McCulloch	Bowlegs	22- 8-6	3	125	3	187
Magnolia	Hammond	10- 8-6	2	0	2	80
Magnolia	Davis	13- 8-6	1	700	1	1,007
Magnolia	Vanbuskirk		1	105	0	0
Total Magnolia			4	805	3	1,087
Mid-Continent	Baker	10- 8-6	4	1,982	4	1,997
Mid-Continent	Bowlegs	22- 8-6	1	340	1	415
Mid-Continent	Smith	12- 8-6	4	640	3	610
Total Mid-Continent			5	2,964	8	3,024
Minnehoma	Bowlegs	15- 8-6	4	320	4	389
Prairie	Gahagan	23- 8-6	4	1,125	4	805
Prairie	Harber	10- 8-6	7	4,065	7	4,175
Prairie	Jones	11- 8-6	2	3,270	2	1,790
Prairie	Templeton	12- 8-6	4	5,430	4	6,285
Prairie	Whitney	23- 8-6	4	150	4	133
Total Prairie			21	14,040	21	13,188
Pure	Reed	14- 8-6	15	6,726	16	6,850
Pure	D. Strother	14- 8-6	3	1,355	3	928
Pure	F. Strother	10- 8-6	2	672	1	570
Total Pure			20	8,758	20	8,348
Roxana et al	Taylor	16- 8-6	6	1,729	6	1,945
Shaffer	Lacey	14- 8-6	3	720	3	800
Sinclair	Bowlegs	22- 8-6	1	105	1	85
Sinclair	Cumsey	10- 8-6	2	5,270	2	5,057
Sinclair	Ellen	11- 8-6	6	3,432	6	3,885
Sinclair	Harjo	14- 8-6	3	1,335	3	1,620
Sinclair	Jones	8- 8-6	5	7,015	4	7,060
Sinclair	Taylor	10- 8-6	4	2,825	4	3,000
Sinclair	Walker	22- 8-6	4	1,555	4	1,470
Total Sinclair			25	21,537	24	22,177
Texas	Reed	14- 8-6	9	6,803	9	7,415
Tidal	Grayson	13- 8-6	3	1,920	3	1,565
Tidal	Harjoche	10- 8-6	6	2,790	5	2,343
Total Tidal			9	4,710	8	3,910
Twin State	Jones	10- 8-6	2	135	2	135
TOTAL BOWLEGS			280	131,489	273	130,157
LITTLE RIVER						
Amerada	Fore	35- 8-6	1	990	1	1,080
Amerada	Nitey	35- 8-6	4	3,185	4	3,250
Total Amerada			5	4,175	5	4,330
Blackwell	Nitey	35- 8-6	7	5,360	7	5,662
Carter	Fish	1- 7-6	1	775	1	850
Continental	Cozar	2- 7-6	2	1,410	1	1,140
Gypsy	Campbell	36- 8-6	2	1,005	2	1,275
Gypsy	Nungee	1- 8-6	1	0	1	52
Gypsy	Pottey	35- 8-6	1	1,280	1	1,415
Gypsy	Wadsworth	1- 7-6	1	0	2	40
Total Gypsy			5	2,285	6	2,782
Independent	Harris	23- 7-6	1	58	1	95
I. T. I. O.	Dungan	35- 8-6	3	3,735	3	3,982
I. T. I. O. WE	House-A	1- 7-6	1	80	1	0
I. T. I. O. WE	House-B	2- 7-6	3	2,811	3	2,418
I. T. I. O. MA	House	1- 7-6	1	1,201	1	1,392
I. T. I. O.	Jackson	1- 7-6	3	3,654	3	3,921
I. T. I. O.	McCulla	1- 7-6	3	1,226	3	1,054
I. T. I. O.	Nitey	2- 7-6	5	3,132	5	3,261
I. T. I. O.	Phoebe-A	36- 8-6	2	732	1	853
I. T. I. O.	Phoebe-B	36- 8-6	2	1,227	2	1,146
I. T. I. O.	Reed	1- 7-6	1	201	1	597
I. T. I. O.	Soketneche	1- 7-6	4	1,615	4	1,545
Total I. T. I. O.			28	19,614	27	20,167
Mid-Continent	Wadsworth	26- 8-6	7	4,115	7	2,504
Mid-Continent	Smith		1	55	0	0
Philmack	Davis	1- 7-6	1	1,432	1	1,435
P & R	Dungan	35- 8-6	1	0	1	15
P & R	House	2- 7-6	3	2,925	3	3,370
Total P & R			4	2,925	4	3,385
Roxana	Smith	1- 7-6	1	20	1	35
Superior	Wadsworth	1- 7-6	1	23	1	15
Texas	Coker	1- 7-6	3	860	2	985
Tidal	House	1- 7-6	2	1,760	2	2,065
Tidal	Johnson	1- 7-6	1	0	1	165
TOTAL TIDAL			3	1,760	3	2,230
TOTAL LITTLE RIVER			70	44,867	67	45,617
EARLSBORO						
Amerada	Anderson	15- 8-6	3	2,710	4	2,805
Amerada	Cowden	4- 9-5	8	1,955	8	2,250
Amerada	Rodgers	3- 9-5	2	830	2	2,185
Total Amerada			13	5,495	14	7,240
Barnsdall	Brown	10- 9-5	4	4,731	4	3,965
Barnsdall	Bruner-F	2- 9-5	2	1,095	2	982
Barnsdall	Bruner-N	11- 9-5	3	5,381	3	5,822
Barnsdall	Cudjo	11- 9-5	1	29	1	29
Barnsdall	Davis-D	11- 9-5	3	1,479	3	1,553
Barnsdall	Davis-J	11- 9-5	3	3,952	3	4,872
Barnsdall	Davis-M	11- 9-5	3	1,106	3	1,339
Barnsdall	Gibson	9- 9-5	7	4,196	6	2,821
Barnsdall	Ingram	4- 9-5	7	9,078	7	7,155
Barnsdall	Pack	10- 9-5	4	551	4	721
Barnsdall	Peter	10- 9-5	4	447	4	458
Barnsdall	Sebolka	15- 9-5	1	1,409	1	1,672
Barnsdall	Sullivan-H	11- 9-5	2	51	2	257
Barnsdall	Sullivan	10- 9-5	3	55	3	54
Barnsdall	Watsutke	12- 9-5	3	923	3	1,279
Total Barnsdall			50	34,493	50	33,113
Carter	Davis	13- 9-5	1	1,475	1	1,745
Carter	Payne	12- 9-5	3	1,340	3	1,240
Carter	Sango	2- 9-5	3	8,686	3	9,650
Total Carter			7	11,500	7	12,635
Continental	Kays	2- 9-5	2	1,440	2	2,210
Continental	Spencer	12- 9-5	4	2,805	4	3,500
Total Continental			6	4,245	6	5,710
Crosbie	Bryant	9- 9-5	2	1,348	2	2,700
Empire	Barker	12- 9-5	1	3,617	0	0
Empire	Edmundson	3- 9-5	3	2,236	3	2,570
Gypsy	Bruner	10- 9-5	4	6,982	4	8,557
Gypsy	Carter	11- 9-5	9	7,770	9	9,177
Gypsy	Hunick	5- 9-5	1	552	1	617
Gypsy	Noble	12- 9-5	4	4,335	4	3,555
Gypsy	Peter	10- 9-5	6	1,122	6	1,287
Gypsy	State	16- 9-5	4	827	4	122
Gypsy	Sango	1- 9-5	3	1,293	3	1,895
Total Gypsy			31	22,881	31	25,210
Independent	Bruner	10- 9-5	4	1,825	4	2,610
Independent	Gaines	11- 9-5	2	6,605	2	8,260
Independent	Knappen	8- 8-5	5	3,575	5	5,215
Independent	O'Dell	4- 9-5	4	500	4	435
Independent	Sullivan	10- 9-5	4	45	4	203
Total Independent			19	12,550	19	16,723
Interocean	Payne	12- 9-5	1	20	0	0
Magnolia	Bryant	9- 9-5	6	2,101	5	2,122
Magnolia	Cowden	4- 9-5	4	71	3	29
Magnolia	Dixon		1	72	0	0
Magnolia	Edmundson	3- 9-5	2	734	2	764
Magnolia	Holmsley	11- 9-5	7	2,449	6	3,104
Magnolia	Ingram	10- 9-5	1	37	1	35
Magnolia	Lena	10- 9-5	3	327	3	341
Magnolia	Seay	12- 9-5	5	1,392	5	2,545
Magnolia	Simpson	10- 9-5	4	400	4	727
Magnolia	Sparks	11- 9-5	7	4,376	7	4,485
Magnolia	Sullivan	12- 9-5	2	1,901	2	2,125
Total Magnolia			42	13,860	38	16,277
Mid-Continent	McCumber	9- 9-5	7	2,250	7	2,595
Mid-Kansas	Anderson	14- 9-5	3	670	3	740
Phillips	Dunnaway	15- 9-5	1	31	1	30
Phillips	Graham	9- 9-5	7	447	7	387
Total Phillips			8	478	8	417
Prairie	Baker	23- 9-5	1	50	1	45
Prairie	Davis	13- 9-5	4	1,635	4	1,740
Prairie	Graham-C	3- 9-5	2	1,265	2	1,570

(*Continued on Page 43*)

Seminole District Production by Companies and Leases, November 18 and November 10, 1927

(Continued from Page 42)

Company	Farm	S.T.R.	Nov. 18th No. Wells	Nov. 18th Prod.	Nov. 10th. No. Wells	Nov. 10th. Prod.
Prairie	Graham-O	10- 9-5	4	4,190	4	3,605
Prairie	Stidham	11- 9-5	13	10,335	13	10,740
Total Prairie			24	17,475	24	17,700
Roxana	Bayliss	17- 9-5	1	17	1	17
Roxana	Spencer	12- 9-5	2	815	2	217
Total Roxana			3	832	3	334
Shaffer	Clark	1- 9-5	4	679	3	247
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	3	425	3	902
Sinclair	Sango	2- 9-5	1	2,085	1	2,730
Total Sinclair			5	2,520	5	3,665
Skelly	Spencer	12- 9-5	2	2,845	2	2,660
Texas	Anderson	2- 9-5	3	1,090	1	260
Texas	Brown	10- 9-5	7	1,405	4	1,785
Texas	Rodgers	5- 9-5	3	7,115	3	5,455
Texas	Wilmont	10- 9-5	6	3,145	5	3,100
Total Texas			19	12,755	13	13,260
Tidal	Watkins	9- 9-5	5	2,545	5	2,520
Twin State	Baker	12- 9-5	4	265	4	315
Twin State	Hearn	2- 9-5	2	4,315	1	2,395
Total Twin State			6	4,580	5	2,710
TOTAL EARLSBORO			264	159,814	254	166,366
TOTAL LITTLE RIVER			70	44,867	67	45,617
TOTAL SEARIGHT			62	26,317	59	25,686
TOTAL BOWLEGS			280	131,489	273	130,157
TOTAL SEMINOLE			324	59,785	324	61,189
GRAND TOTAL SEMINOLE DISTRICT			1,000	422,272	977	429,015
Average per Well				422		439

Completions in N.E. Central, West, Panhandle and North Texas, Week Ended November 18, 1927

NORTH AND EAST-CENTRAL TEXAS

Company	Well Farm	Location Survey	Depth	Init. Prod.
Anderson County				
Cosden et al	1-Duglas	Simpson	T.D. 3532	Dry
Brown County				
Humble	12-Armstrong	Delgado	1202-1221	34
Cranfill et al	17-Smith	SA&MG	1340-1357	50
Hughes	1-Miaudin	SA&MG	1355-1366	25
Phillips	7-Newsome	Presslar	1322-1339	25
Volz	1-Pony	Honey	1230-1270	25
Longre	1-McDonald	Hunt	1496-1516	2¾M
Kone	8-Hickman	Benson	T.D. 1250	Dry
Amerada	1-Moore	SA&MG	T.D. 1515	Dry
Rex Tex et al	1-Scott	Presslar	T.D. 1914	Dry
Clark et al	3-Guyer	Flores	T.D. 844	Dry
Clark et al	4-Guyer	Flores	T.D. 885	Dry
Callahan County				
Jones et al	1-Pate	Duson	T.D. 1820	Dry
Gibson et al	1-Newman	Univ.	T.D. 865	Dry
Marton	1-Jackson	Young	T.D. 1580	Dry
Reid et al	1-Hood	D&DA	T.D. 812	Dry
Beddingfield et al	4-McDermott	Comal	T.D. 435	Dry
Bradstreet	2-Waller	Vigal	1725-1728	115
Bradstreet	3-Waller	Vigal	1667-1726	150
Skelly et al	1-Orrell	Comal	1642-1668	2
Turley	2-Hickman	Jones	450-453	4
Coleman County				
Cunningham	1-Jennings		1096-1516	1M
White Eagle et al	3-Casey	Cockron	T.D. 1657	Dry
Allison	1-Fender	Babbington	T.D. 2810	Dry
Cherokee County				
Humble	2-Elliott	Winsor	3535-3536	10M
Eastland County				
Kokomo	1-Moots	H&TC	T.D. 2965	Dry
Texas-Pac	1-Dillon	H&TC	T.D. 3675	Dry
Lorenzo	1-Qualls	TE&L	T.D. 2306	Dry
Limestone County				
Why Not	1-Rhea	Varella	2898-2902	100
Transcont	2-Lewis	Varella	T.D. 2923	Dry
Palo Pinto County				
Burton et al	5-Strawn Coal Co.	Ashworth	2998-3015	1M
Mountains	1-Castello	Smith	T.D. 3978	Dry
Runnels County				
Ladd	1-McMillan	Doningo	2546-2547	165
Smith County				
Gulf	1-Morgan	Moore	T.D. 527	Dry
Stephens County				
Republic	7-Know	TP	T.D. 4690	Dry
Goodman	1-Stevens		T.D. 2250	Dry

NORTH TEXAS

Company	Well Farm	Location Survey	Depth	Init. Prod.
Archer County				
Simms et al	4-Perkins	DCSL	1758-1764	25
Atlantic	6-Wilson	DL&C	1544-1548	10
McGregor et al	3-Farmer	N A R	1503-1505	20
Long et al	2-Hudson	Harris	1160-1165	8
Hines	1-Whitaker	Harris	T.D. 1536	Dry
Jeffers et al	1-Andrews	Farley	T.D. 940	Dry
Murchison	1-Tuberville	JCSL	T.D. 1102	Dry
Cook et al	1-Haytor	TE&L	T.D. 1454	Dry
Underwood et al	1-Ward	TE&L	T.D. 1151	Dry
Silkwood et al	1-Williams	Swing	T.D. 601	Dry
Clay County				
Foster	1-McAdams	Grayson	T.D. 1720	Dry
Cooke County				
Housman	1-Cox	Lockhart	T.D. 1285	Dry
Sun	6-Hacker	Scott	1635-1658	60
Grayson County				
Tucker et al	1-Thron	Stewart	T.D. 3033	Dry
Richardson et al	1-Taylor	McKinney	T.D. 2545	Dry
Montague County				
Bridwell et al	1-Brown	Nichols	T.D. 1994	Dry
Texas	2-Hinton	Coates	782-799	165
Wichita County				
Simms	1-Preston	RRVL	T.D. 1761	Dry
Swanner et al	1-Parker	McCool	T.D. 1861	Dry
Petroleum	1-Kemp	Meade	T.D. 1840	Dry
Wilbarger County				
Consolidated et al	1-Waggoner	H&GN	T.D. 2425	Dry
Young County				
Christie	1-Carter	TE&L	T.D. 1591	Dry
Texas	1-Clatchey	TE&L	T.D. 1152	Dry
Muse	1-Hamilton	TE&L	T.D. 910	Dry
United Prod. et al	1-Sherer	TE&L	T.D. 948	Dry
Hamilton	1-Neeley	TE&L	T.D. 1153	Dry
Atlantic	2-Keen	TE&L	807-809	30

PANHANDLE

Company	Well Farm	Location Survey	Depth	Init. Prod.
Carson County				
Marston	6-Bryan	I&GN	T.D. 2533	Dry
Texas	1-McConnell	I&GN	2510-2670	51M
Vitek	1-Eller	I&GN	T.D. 900	Dry
Hartley County				
Eslick et al	1-Irvins	C&SS	T.D. 4000	Dry
Hutchinson County				
Anderson-Pritchard	2-Yake	H&GN	T.D. 3060	Dry
Phillips	22-Cobls et al	M&C	2945-2966	40
Texas	1-Moore	I&GN	2985-3055	75
Moore County				
Dugan et al	1-Dumas	H&TC	T.D. 3640	13M

WEST TEXAS

Company	Well Farm	Location Survey	Depth	Init. Prod.
Crane County				
Humble	12-Univ.	Univ.	2880-2991	1099
Crockett County				
Williams	2-Powell	EL&RR	2598-2620	35
Pecos County				
Garfield et al	1-Batcheler	GC&SF	T.D. 2933	Dry
Upton County				
Marland	11-Estep	MK&T	T.D. 2403	Dry
Marland	34-Burleson	Jones	T.D. 3255	Dry
Marland	3-Benton	Prather	T.D. 515	Dry
Winkler County				
Murchison et al	3-Lemar	PSL	2658-2696	80
Murchison	1-Hendricks	PSL	2658-2915	425&8M

He Got a Dinner Suit And Fund to Press It

HOUSTON, Nov. 19.—Another stage has been reached in that momentous development whereby David Donoghue, land and geological director of Texas Pacific Coal & Oil Co., Fort Worth, became the possessor of a dinner suit.

President E. J. Marston promised Mr. Donoghue such a suit when he "could learn to wear it"; also the actual purchase was recorded. Now it is announced unofficially but reliably in Fort Worth that John M. Lovejoy of Tulsa, chairman of the petroleum division of the American Institute of Mining & Metallurgical Engineers and general manager of the Amerada Petroleum Corp., has come to the further aid of Mr. Donoghue.

A trust fund of $50 is being collected by Mr. Lovejoy, according to latest advices, the money to earn 6 per cent interest and provide for at least semi-annual pressing of the suit.

CLEVELAND, Nov. 22.—U. S. District Judge Hickenlooper will hear the case in which the Standard Oil Co. of Ohio has attacked the validity of the Piqua, O., ordinance requiring posting of gasoline specification, sometime in the week of Dec. 5 at Dayton, O. The case was to have been heard Nov. 25.

Completions in Oklahoma and Kansas, Week Ended November 19, 1927

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	3	SEc 18-8-3 W	3030-3807	32
Schermerhorn et al	2	NEc SE NW 11-2-3 W	3132-4000	225
Skelly	1	SEc SW NE 21-2-3 W	T.D. 2755	Dry

Creek County

Thompson et al	5	NWc SE SW 16-17-11 E	T.D. 760	Dry
Carpenter et al	4	CWL NE SW 22-17-11 E	T.D. 2523 OWD	Dry
Curtis	1	NEc NW 27-17-11 E	T.D. 2530	Dry
Sinclair	2	SWc 9-18-7 E	2293-2659 OWD	5
Gray et al	1	SE SW 20-15-8 E	3285-3291	200
Texas	2	NEc SE NE 23-17-10 E	2480-2488	25
Wright	23	SWc NW NW 24-17-10 E	2465-2478	45
Twin State	2	NWc SW NE 2-16-11 E	2662-2671	75

Garfield County

Sinclair	12	NEc SW NE SW 25-22-4 W	1555-1570	41

Grady County

Nichols	4	SEc 27-5-8 W	2035-2376	10M
Carter	2	NEc 7-5-8 W	2112-2119	31
Carter	3	NWc SE NW 8-3-5 W	2483-2486 OWD	25
Marland	4	SWc NW SW 16-3-5 W	2559-2569	52
Marland et al	3	NEc SE NE 17-3-5 W	2268-2288	252
Carter	2	NWc SW 22-3-5 W	1732-1742	7
Carter	1	SWc NW NW 35-3-5 W	T.D. 2744	Dry

Kay County

Comar	5	NWc SE 5-28-1 W	T.D. 3592	Dry
McComas et al	1	NEc SW 6-28-1 E	T.D. 4302	Dry

Logan County

Brown et al	1	SWc NW 9-18-4 W	T.D. 4716	Dry
Ramsey Bros	1	SEc 25-18-4 W	T.D. 4507	Dry

Muskogee County

Foltz	1	CEL SW 28-15-17 E	T.D. 1419	Dry
Metzger	6	NEc SE 6-14-19 E	T.D. 742	Dry
Phillips	3	CEL NE SE 8-15-15 E	1617-1618	60

Okfuskee County

Riverland	1	SWc SE SW 19-11-11 E	3602-3648	1065
Unborn	1	SWc SE SE 35-11-11 E	2508-2526	4M
Roger et al	1	SEc SW NE 5-10-10 E	T.D. 4142	Dry

Okmulgee County

Anadarka Western Oil	1	NWc NE SE 24-15-11 E	T.D. 2816	Dry
Jordan et al	1	SEc SW SW 1-14-12 E	T.D. 2731	Dry
Dewitt et al	1	NWc NE 36-16-13 E	1640-1642	14M
Kirkland et al	2	CNL NE NE 18-15-13 E	2036-2064	6M
Denton et al	1	NEc NW 17-15-14 E	1890-1915	4M
Selby	9	DEL NE SW 10-14-14 E	1197-1204	10

Osage County

I. T. I. O.	100	NWc SE NE 27-27-10 E	T.D. 1998	Dry
Sand Springs Home	108	SWc NE 30-21-10 E	T.D. 2085	Dry
Kewanee	3	SEc NE SE SE 6-21-12 E	T.D. 2787	Dry
Gypsy	7	NEc NW SE 28-27-6 E	2891-2955	363
Kewanee	4	SWc SE SE 34-27-6 E	2796-2882	787

Payne County

Twin State	1	SWc NE 8-18-4 E	T.D. 4700	Dry

Pottawatomie County

Pure	1	NEc SW 16-9-5 E	T.D. 4303	Dry
Amerada	3	SEc SW SW 4-9-5 E	4278-4304	165
Amerada	8	NWc SW SW 4-9-5 E	4453-4547	120
Magnolia	6	SWc NW SW 4-9-5 E	4385-4387	64
Texas	4	SEc NE SE 5-9-5 E	4460-4467	120
Magnolia	6	SWc SE NW 9-9-5 E	4250-4267	265
Tidal	8	SWc NE NW 9-9-5 E	4480-4494	145
Atlantic et al	1	SEc SW SW 10-7-4 E	3662-4020	150
Independent et al	2	SWc NW SW 14-7-4 E	3652-3765	916
Mid-Continent	7	NEc SE SW 19-7-4 E	3733-3786	380

Pontotoc County

La Salle et al	2	SWc NE SW 28-5-5 E	2188-2363	40
Homa Okla	2	SWc NE SE 17-5-8 E	2445-2513	390
Homa Okla	1	SEc NE NE 17-5-8 E	2400-2614	432
Louisiana	4	SEc NW 20-5-8 E	2596-2525	537
Louisiana	4	SEc NW 20-5-8 E	2554-2625	727
Ramsey	3	NEc NW SW 20-5-8 E	2448-2513	630

Seminole County

Mid-Continent	3	SWc SE SW 33-10-6 E	4322-4331	1200
Barnsdall	3	SWc 1-9-5 E	4304-4316	100
Barnsdall	6	SEc NW SW 1-9-5 E	4334-4344	2400
Sinclair	1	SEc NE 2-9-5 E	4338-4351	2935
Texas	4	NEc SW NW 10-9-5 E	4465-4499	60
Texas	3	SEc NE SE 10-9-5 E	T.D. 3565 OWD	75
Wilcox	4	NWc SW SE 4-9-5 E	4150-4176	16
Gypsy	1	SEc NE 7-8-6 E	4465-4466	217
Atlantic	2	NEc SW SE 9-8-6 E	4266-4271	525
Gypsy	1	NEc SE SW 9-8-6 E	4339-4342	132
Mid-Continent	2	SEc SW 12-8-6 E	4831-4835	100
Magnolia	2	NWc NE 13-8-6 E	T.D. 4202	1072
I. T. I. O.	1	NWc SW SE 36-8-6 E	4138-4149	978
Mid-Continent	5	SWc SE SW 36-8-6 E	4138-4183	800
I. T. I. O.	3	SWc NE SE 2-7-6 E	4140-4147	1080
Mid-Continent	8	SEc SW 36-8-6 E	T.D. 4337	350
Phillips	1	NWc NE 22-8-6 E	3197-3253	17M
I. T. I. O.	3	SEc NW 1-8-6 E	4548-4552	358
I. T. I. O.	2	NWc NE 1-8-6 E	4314-4318	224
Texas	2	NEc SW 1-8-6 E	4341-4346	105
Amerada	2	SEc NE 2-8-6 E	4133-4156	1315
Amerada	3	SWc SE NE 2-8-6 E	4227-4234	2185
I. T. I. O.	2	NWc NE SE 2-8-6 E	4406-4410	1506
I. T. I. O.	7	SEc SE NE 2-8-6 E	4219-4226	414
I. T. I. O.	9	NWc NE 2-8-6 E	4280-4284	215
Independent	1	SWc NW NW 23-8-6 E	4323-4324	2360
Amerada	1	NWc SW 8-8-6 E	T.D. 4537	Dry
Pure	5	NWc SE SW 11-8-6 E	T.D. 4484	Dry
Pure	8	NEc NW 14-8-6 E	T.D. 3440	Dry
Pure	1	SEc SW 35-8-6 E	T.D. 4380	Dry
Independent	1	SWc NW SE 15-8-6 E	T.D. 3347	Dry
Philmack	1	NWc SW SE 1-7-6 E	T.D. 4183	Dry
I. T. I. O.	6	NEc SW NE 2-7-6 E	T.D. 4355	Dry
Twin State	1	SEc NE SW 2-7-6 E	T.D. 4434	Dry
Twin State	2	NEc SW 2-7-6 E	T.D. 4367	Dry

Stephens County

Mudge	1	SEc SW SE 15-8-6 W	T.D. 1737	Dry
Pearce et al	1	NEc NW NW 34-8-6 W	T.D. 1760	Dry

Tulsa County

Enfisco	1	NWc SE SE 20-17-13 E	1714-1724	8
Turner et al	5	NWc SW SW 9-16-12 E	1440-1515	1M

Wagoner County

Boyle et al	2	SE NE NE SW 32-18-16 E	T.D. 960	Dry

KANSAS

Chase County

Basom et al	1	SWc NE NE 12-22-9 E	T.D. 2520	Dry
Basom et al	1	NEc NW SE 26-22-9 E	T.D. 2568	Dry

Greenwood County

Skelly	1	NEc NW 24-22-10 E	T.D. 2340	Dry
Mendenhall et al	1	SWc SE NE 16-25-13 E	T.D. 1599	Dry
Manhattan	5	NWc 11-22-10 E	2098-2151	350
Empire	17	SWc NE NW 23-22-11 E	1856-1893	10
Darby	4	SEc SW SW 24-22-12 E	1646-1699	275
Federal	1	Lot 6 South	1667-1749	420

California Crude Production May Reach 650,000 Barrels Daily

LOS ANGELES, Nov. 19

MANY have reached the conclusion that the daily average production of crude oil in California during the next 12 months will run between 625,000 and 650,000 barrels, in spite of the hope often expressed that for the next few months production could or would be held very closely to 600,000 barrels a day.

Such a figure had appeared possible until the drilling campaign started at Long Beach for the deeper sand, notwithstanding the threat of what a new field at Rincon in Ventura county might do. The new field had been proved, but it had been thought for a time that it would take longer to complete the wells.

At Rincon, Pan American's well, which flowed more than 1500 barrels of oil and water, more than half water, is now being recompleted after the fact had been proved that the water was coming into the hole at 3050 feet, with bottom of hole at 3220 feet. This well had slightly better than 400 feet of oil sand, and after the bottom is plugged, there will still be about 250 feet of pay formation to produce from. Pan American is making arrangements to start 5 new wells in this field, while Chanslor-Canfield-Midway Oil Co. is building derricks for 5 wells to be drilled at once. E. J. Miley will drill 3 wells and is now hauling in material. Petroleum Exploration Co. has location for a test and other companies are expected to make locations in another week or 10 days. If a majority of these wells find production at a point less than 4000 feet, this field will be in the production column to a considerable extent soon after the first of the year.

But Long Beach holds out the greatest threat. Late this week there were 75 operations ranging from drilling wells, deepening jobs to rigs already built, not including a few locations. Former indications that there would be 100 wells drilling before the end of the year is borne out by developments of the past days. Richfield Oil Company completed another good well this week at slightly less than 6000 feet, making about 3500 barrels of clean oil and a lot of gas with a natural gasoline con-

"Overproduction today is injuring millions who have their wealth invested in oil properties; it is injuring the great producing and refining companies; it is depleting a natural resource which can never be replaced."

Extract from the speech of Hon. Hubert Work Secretary of the Interior and Chairman of the Federal Oil Conservation Board, before the Mineral Law Section, American Bar Association, at Buffalo, August 30, 1927

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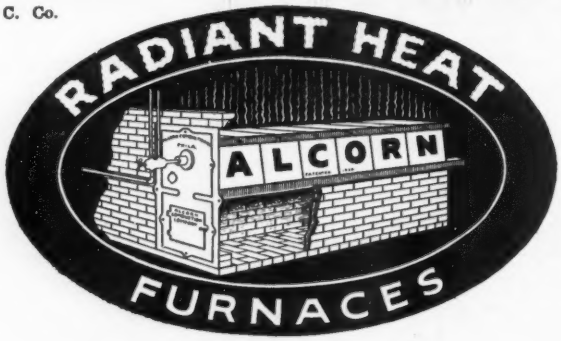

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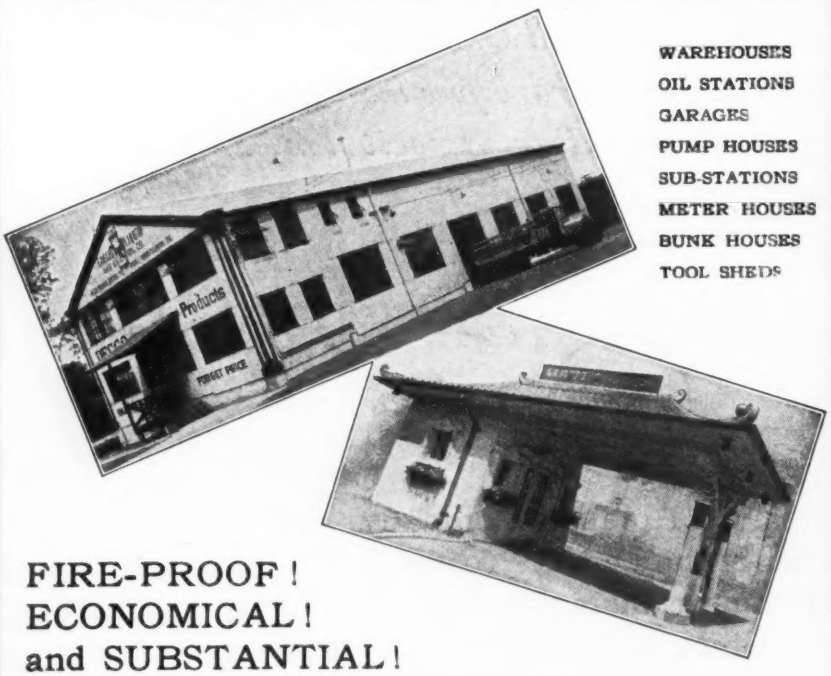

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tent of about 4 gallons to the thousand cubic feet. Richfield alone expects to have a daily production at Long Beach in a few weeks that will exceed 25,000 barrels, including its old production, and likely more than that amount.

Shell Co. has started a drilling campaign that will considerably increase that company's daily production in state within 90 days.

Most of the larger companies, not including Standard, have announced ambitious drilling campaigns at Long Beach. Many of the wells now drilling are offsets and practically every new location made will call for an offset. It is now considered that the deeper sand underlies about 800 acres and there is a probability that it also underlies the Los Cerritos area, or what is known as the northwest extension, but at a still greater depth.

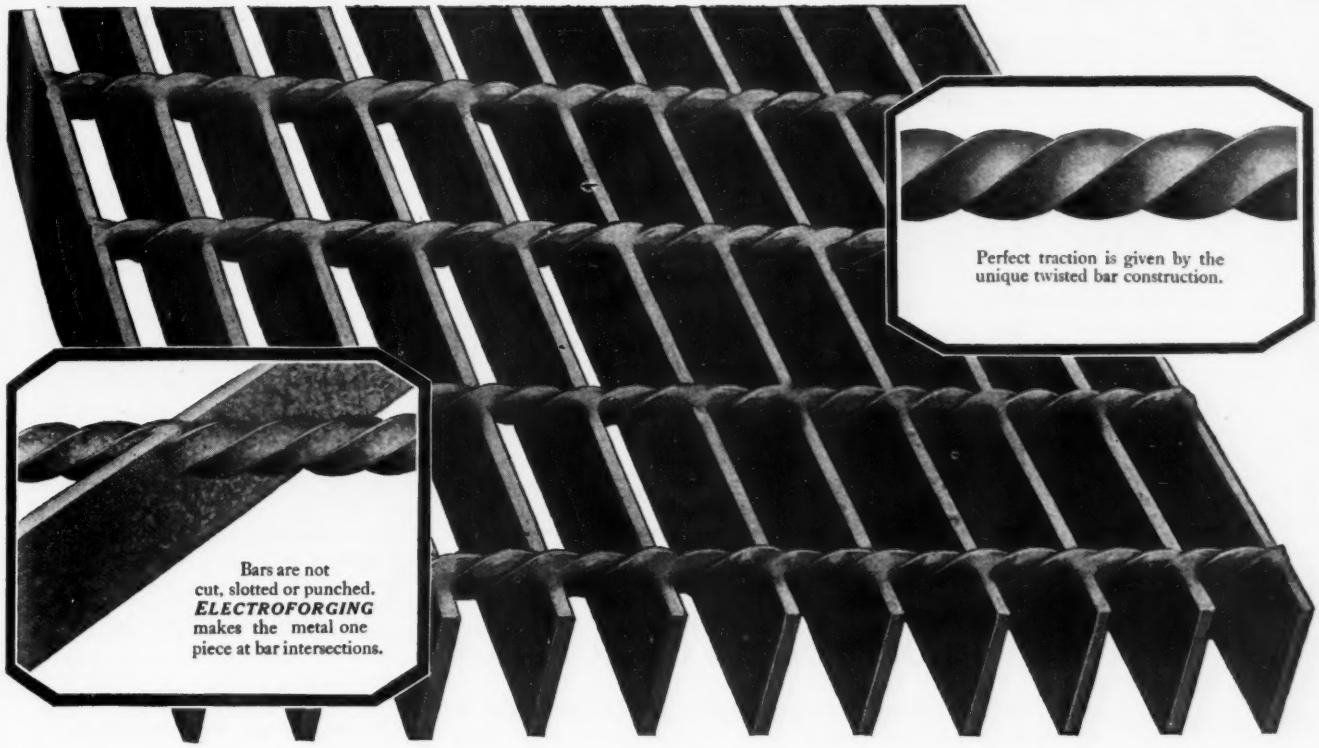
Most of Los Cerritos is held by small Independent companies and individuals and so far no location has been made in this area. It is possible that attempts will be made to block up a number of small leases for drilling purposes, thus preventing the drilling of wells so close together.

THE location of a new field has also been proved at Bakersfield where the Pacific Eastern (Gulf) produced its wildcat from time to time, but this hole is in a bad way and it is possible that another test will have to be drilled. Until at least one well is on actual production, not much drilling will be done in this area, which is known as the Union Avenue district. Practically every acre within several miles in every direction has been leased, and one producer will start much drilling activity.

Several other areas in California are threatening, but are not to be taken into account at this time. The threats are there, but it will be early next year before it is known what can be expected.

Seal Beach is quiet, with only 30 wells drilling in the Alamitos Heights area. Production is about holding steady now, with so many wells on the gas lift, and stiff declines are not expected. It is reported that it may be around the first of the year, if then, before there will be any real activity in the older part of the field, held tightly by the Associated, Marland and Standard.

Barnsdall this week completed an interesting high gravity well at Rosecrans, a field that has been inactive for some time. This well is nearer the middle of the field than the other high gravity wells, and its production of close to 2000 barrels came as a surprise. This means the drilling of a few more wells in the area near the Barnsdall well.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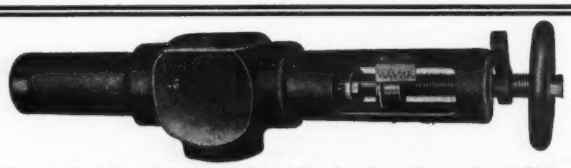

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Gulf Coastal Deep Pay Situation Controlled

Staff Special

HOUSTON, Nov. 18.—The third discovery well of the Gulf Coastal salt dome territory in the last three weeks was completed, Nov. 17, when the Navarro Oil Co.'s No. 3 Cain, at Pierce Junction, made 2500 barrels initial production at 5260 feet. The well is on a previously productive dome, but gives up its oil from a newly discovered pay horizon at more than 1000 feet greater drilling depth than any of the earlier completions.

About a week ago the Mills Bennett interests, drilling on Kirby Petroleum Co. fee acreage on the east side of the old Barbers Hill salt dome, completed a 1500 barrel deep pay discovery at about 5480 feet. When water broke in on the Barbers Hill well it was worked over and swabbing begun to start off the flow again. A swab was lost in the hole and a fishing job is now under way.

The third recent discovery in the Gulf Coastal area was the joint well of the Calcasieu Oil Co., the Magnolia Petroleum Co., and the Union Sulphur Co., at Hackberry Island, Louisiana, near Lake Charles. It started off making 1500 barrels daily, initial production, through three-eighths inch choker at 2995 feet.

Because of the close control of acreage at Hackberry the development of this district promises to be carried ahead slowly. The three companies interested in the 2500-acre block on which the discovery well was drilled each own an undivided one-third of the property. Harry C. Hanszen, of Houston, and James W. Gardner of Lake Charles, are principals in the Calcasieu Oil Co.

The Pierce Junction deep pay discovery is on the east side of the dome adjacent to original development in the field at about 2500 feet. There is enough diversity of acreage control to stimulate additional development, but it is not in the present picture that the field will increase its daily average yield more than 6,000 to 10,000 barrels in the next few months. A similar situation exists in the area of the Barbers Hill deep discovery.

Eastern Kentucky Refinery Market

Ashland, Nov. 22.—Price of 60-62 gasoline is down ⅛-cent from previous week and 64-66, 375 e.p. is down ½-cent. Other products are generally unchanged. Nov. 21 prices are:

6062, 400-425 e. p. gasoline	9.125
64-66, 375-390 e. p. gasoline	9.25
41-43 kerosene	6.75
34-46 gas oil	4.625
24-26 fuel oil	3.25

How Profitable is a Grand Opening Day For a New Service Station?

GRAND opening days at new filling stations are not as much in vogue among independent marketers as they used to be. This may be partly because new stations are not being built as fast as they once were, but inquiry among jobbers reveals a growing sentiment against, the custom of making an extravagant exhibition when a new station is opened and giving favors to everybody who drives in.

Of course there is a division of opinion on the subject. "We do not like to throw away our profits any more than anybody else," said the marketing executive of a major oil company recently, "but we have not found a cheaper way to build up patronage at a new station more quickly than to hold an opening, stage a big show, give away something to attract a crowd and get acquainted."

That may be the final decision from this particular company, especially since it is now engaged in building a few hundred handsome filling stations in its territory, hoping to get more business as a direct result of the attractiveness of the installations. Many of these new buildings are replacements of older ones, less convenient and less handsome. Business on a given lot has to be suspended, at least for a time, to replace an old station with a new one. The spirit of their openings is one of welcoming the old clientele back to the new establishment.

Arguments against opening days turn mostly on the statement that they have been overdone and lost their effectiveness. "The public has ceased to accept the favors passed out on opening day in the right spirit", one Independent jobber said recently. "They do not take the free gallon of motor oil as a trial package, to use it and see if they like it. They consider it only a gift—something for nothing. The crowd that jams your station drive on opening day doesn't come back. You have to start in a community and build up trade on quality and service, which takes time. A day of confusion at the station is one day lost."

Many men who still hold to the practice of having formal openings when a new filling station starts doing business, have two significant "Don'ts" for opening days. (1) Don't give away too much and (2) don't give away petroleum products.

Only a few weeks ago, Horatio J. Abbott, Abbott Gasoline Co., of Ann Arbor, Mich., held a remarkable opening at a new station, selling 3441 gallons of gasoline on Saturday and 3001 on Sunday, in lots of five gallons or more, besides a proportionate sale of motor oil and some grease. His favor was a set of water glasses.

The six glasses, Mr. Abbott says, looked like they might sell for $3 at a gift shop. They were dainty and graceful in design. But actually they cost him just 14 cents wholesale. "I never give away oil or gasoline at an opening", Mr. Abbott said. "The customer takes it and consumes it and forgets about it. It is better to give them something they can keep and will want to keep to be a reminder of the oil man who passed it out."

R. E. Andrews, Pennsylvania Oil Co., Madison, Wis., strengthens Mr. Abbott's position. He said, "It cheapens your merchandise to give it away. We never give away oil or gasoline in any case. We seldom give away anything at all. The last station we opened we gave toy gas balloons to the children who rode to the station in the cars of patrons, but we got a direct benefit from that. The balloons carried our advertising on them. Sometimes we just put up an 'Open for Business' sign, when we start a new filling station.

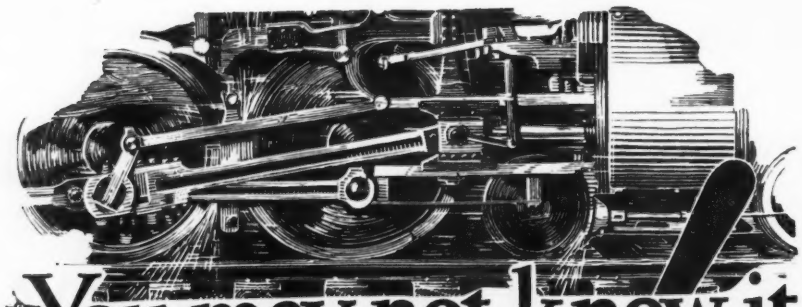
"More is often given away at an opening than the profits of the big day amount to, but that is not the most objectionable feature." Mr. Andrews says. "The bargain hunters who come for the donation and never come back are of less importance than those real and prospective customers who show up on opening day, get poor service in the rush and confusion and never come back. Why spend your profits for gifts to attract ungrateful bargain hunters to your station who will tend to drive the valuable customers away?"

FREE
WE HAVE SOLD 3,500 GALLONS OF GASOLINE. AT 16¢ PER GALLON IT NETS US $560. BUT— WE HAVE GIVEN AWAY $559 WORTH OF PREMIUMS
MEDIUM
LUBRICATING
MOTOR OIL
MOTOR OIL

The end of a perfect opening day

Byran S. Reid, Inter Ocean Sales Corp., Riverside, Ill., a suburb of Chicago, announces his openings by letter to prospects and by advertising in local papers. The opening day at the station is just like any other day. Gasoline and oil are for sale at conventional prices. No effort is made to establish a gallonage record. If the station moves more merchandise the second week than it did the first and the growth looks substantial, all the better.

The letters which the company sends out to motorists in the neighborhood are neither costly nor commonplace. They are mimeographed letters as a rule, but they are short and have a catchy head line written in script



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with a stylus. Or they are illustrated with a funny drawing produced the same way.

Fred E. Bergfors, head of the Quincy Oil Co., Quincy Adams, Mass., follows the same system as Mr. Reid, when his company opens a station, but in addition to sending out mail announcements in the community, he sends out a salesman sometimes to do some verbal announcing. Especially if a station is opened in an industrial community, a salesman is sent out in the neighborhood to solicit patronage from truck fleet operators.

It would not be fair to leave out of this discussion the story of an eminently successful Independent jobber who is sold on the idea of big opening days, even to the extent of operating a new station two or three days at a loss in order to get the public in the habit of driving in. The company in question is the Sweney Gasoline & Oil Co. of Peoria.

On Saturday before Memorial Day, 1927, the Sweney organization opened a super service station in an exclusive residential section of Peoria. Sweney's goods had never been well merchandised in that vicinity before and an opening day was held that broke all previous records of the company. It was a big station with seven separate departments under one roof, and all departments got introduced in the community. This, company officials believe, compensated generously for the expense, even though the cost of the opening far exceeded the profits of the first three days.

During the first week-end the station sold 5710 gallons of gasoline alone; 3840 gallons on Saturday; 1000 gallons on Sunday and 870 gallons on Monday, Memorial day. Everything was sold at the posted price except on the first day when six gallons of gasoline were pumped to every customer who ordered as much as five gallons. On the first day of the opening 4600 gallons of gasoline were dispensed of which 760 gallons were given away.

Gasoline thus given away, one gallon with every five sold, was valued at $75. Newspaper advertising was bought to the cost of $150. A brass band to make music at the station cost $90. Carnations to be given to the ladies cost $80 and toy gas balloons for the children $25. The total cost of the opening was $420. The company figured it made a profit of $256.95 from gasoline sales during the opening. This left about $163 of the cost of the opening to be made up after the first three days. Nevertheless the station did a good business for the rest of the season without any more special inducements, and the management considers the opening profitable.

Would Raise Rates To Conserve Oil

By Special Correspondent

WASHINGTON, Nov. 21.—Petroleum conservation utterances of President Coolidge, of the Federal Oil Conservation Board, of the Bureau of Mines, of D. W. Moffitt and Mark L. Requa have been welded into a merciless conservation proposal by the railroads east of the Mississippi and north of the Ohio and Potomac rivers. They propose an increase in freight rates from the Mid Continent and from Louisiana and Texas into the great consuming markets of the United States.

"No one, upon reviewing the present record, can doubt that the production and refining of petroleum, especially in the Mid-Continent field, has developed in a wasteful and improvident manner. . . . As yet no satisfactory method of restricting the exploration and drilling of new wells has been devised. It would clearly not be sound economics to reduce the efficiency of the existing facilities of transportation. It follows that one of the most readily available means of discouraging the excessive production which now exists in the Mid-Continent, and possibly in some other fields would be to increase the freight rates. . . . Any reduction of the rates on petroleum products would run directly counter to the public interest in conservation of petroleum resources."

The foregoing is part of a declaration made by W. L. Kinter, Guernsey Orcutt, C. R. Webber and A. H. Elder, a committee of lawyers for eastern railroads. Their text for the proposal was furnished by quotations from President Coolidge's observations when he appointed the Federal Oil Conservation Board, from the report of that board dated Sept. 6, 1926, of the Bureau of Mines issued in April, 1926 and from the testimony of Messrs. Moffitt and Requa in the general investigation of railroad freight rates on oil which the Interstate Commerce Commission has been carrying on for more than a year in compliance with a resolution of congress intended to cause the making of preferential railroad freight rates for products of agriculture.

In conclusion, the railroad lawyers assert that if the revenues of their clients should be reduced by reason of that resolution intended to give the farmers lower rates, such reduction "should be fully offset by appropriate increases in the rates on petroleum products." They want the commission to raise the relatively low rates it has prescribed from the Mid-Continent field to Illinois and Indiana instead of still further reducing them as requested by the Mid-Continent refiners.

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Guaranteed 100% PURE PENNSYLVANIA OIL

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100% Pennsylvania Motor Oils, *blended to your own Specifications*, from Freedom 450 Bright Stock and Freedom 100% Pennsylvania Crude Neutrals.

Freedom Quality Stocks
600 Steam Refined
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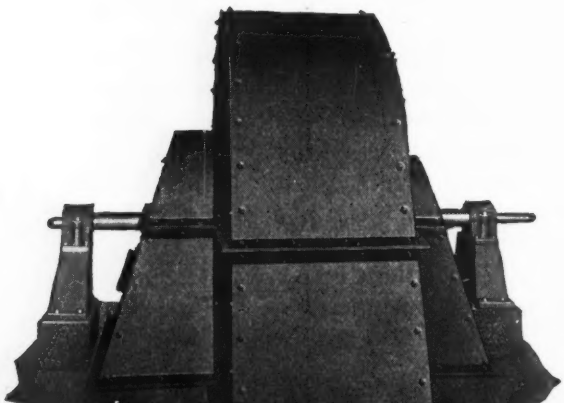

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Detection of Sulfur in Petroleum And Petroleum Distillates

By F. W. Lane*
and
John M. Devine**

SOME months ago the Bureau of Mines began research of a fundamental character on sulfur in petroleum. In the course of this work, the usual qualitative test for sulfur in organic compounds[1] was applied to certain oils that were believel to contain approximately 0.5 per cent sulfur. No sulfur was found, and, as a check on the qualitative test, the oils were subjected to quantitative determination of this element by the oxygen-bomb method.[2] The sulfur content of the oils ranged from 0.10 per cent to 0.50 per cent. This experience led to further trial of the qualitative test for organic sulfur, both on the oils mentioned above, and on common sulfur-containing organic substances. No difficulty was experienced in detecting the element in the latter, but with the petroleum oils the test, as usually performed, could not be relied upon to detect less than 0.60 per cent of sulfur consistently.

The use of mechanically polished pure sheet copper for the detection of free sulfur, hydrogen sulfide, and perhaps other sulfur compounds has been recommended.[3]

As it is recognized that this test can not be relied upon to show the presence of all sulfur compounds in oils, attention was concentrated on the usual qualitative test for sulfur as applied to organic compounds.

The heating of organic substances with potassium or sodium for the detection of the elements was employed by Lassaigne.[4] The method was modified later by others in its various details and applications.[5] As the test is usually performed,[6] a piece of sodium weighing 0.5 gram (¼-inch cube) is heated in a glass or metal test tube, and the substance to be tested for sulfur is dropped directly into the sodium vapor in the tube. The melt is leached out with water and ethyl alcohol, the solution is filtered, and a small portion of the alkaline filtrate is tested for sulfur with sodium nitroprusside. The details of these operations, as given in the various texts, differ quite widely.

Furthermore, the method seems to have been applied mainly to fairly pure solid and liquid organic substances that contain much higher percentages of sulfur than are usually present in petroleum oils. In the interest of the main investigation it is highly desirable to have a method for identifying sulfur in small quantities in petroleum oils before subjecting them to tedious quantitative determination. The object of the present work, therefore, is to modify the usual qualitative test for sulfur in organic compounds so that 0.10 per cent or less of sulfur in petroleum oils may be readily detected.

*Petroleum Chemist, Bureau of Mines.
**Junior Chemist, Bureau of Mines.

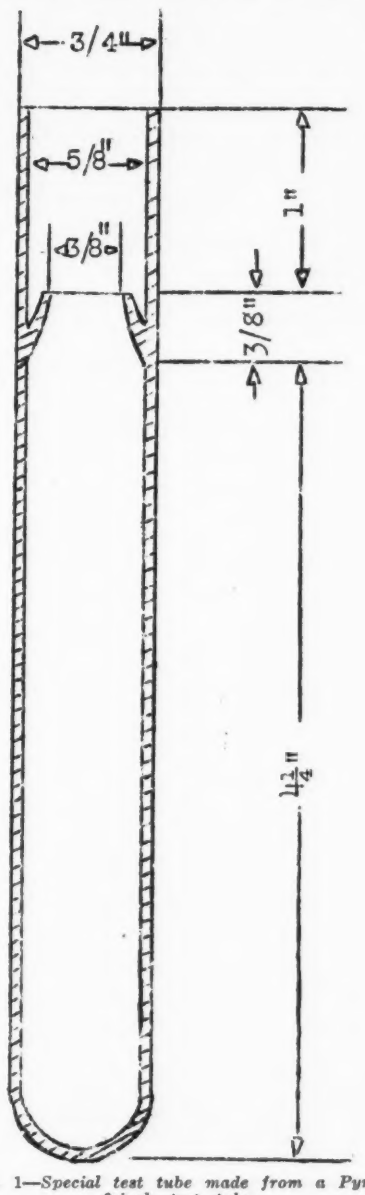


Fig. 1—Special test tube made from a Pyrex 6-inch test tube

Method

THE following method is given for the detection of sulfur in petroleum and petroleum distillates. Reference letters refer to the discussion following the statement of the method. (a)

Clamp a 4-inch Pyrex-glass test tube (b) vertically in an iron clamp which has been wound with asbestos string of small diameter. Place a one-quarter-inch cube of freshly cut sodium in the test tube. (c) Apply heat until the sodium melts and about one-half inch of sodium vapor is present above the sodium. Remove the source of heat and add immediately 5 drops of the oil to be tested. (d) The oil should be dropped directly into the sodium vapor and not allowed to come in contact with the sides of the hot tube.

Replace the burner, heating moderately at first, and gradually bring the lower two-thirds of the tube to a full red heat. (e) When the tube has been thoroughly heated as just described, remove the flame and allow to cool at room temperature. When completely cooled, crush the lower part of the tube and contents in a perfectly dry, clean mortar. Measure out 10 c.c. of distilled water in a small graduate and add a portion of it drop by drop (using a medicine dropper) to the crushed mass in the mortar, letting each drop react before adding the next. (f)

When no further reaction is apparent, add the remainder of the 10 c.c. of water cautiously, directly from the graduate. (g) Filter, catching the filtrate in a 10 c.c. graduate. Wash the mortar contents and the filter with sufficient distilled water to make the volume in the graduate 10 c.c. after filtration. Stir the solution in the graduate thoroughly and, using a funnel, place 5 c.c. of it in a specially designed test tube. (See Fig. 1)

Add a small piece of clean porous tile to the contents of the tube, incline the tube slightly, and add enough hydrochloric acid (Sp. Gr. 1.19) through a funnel to make just acid. (h) Immediately after acidifying place over the mouth of the tube a piece of filter paper which has been

1—Mulliken, S. P. "A Method for the Identification of Pure Organic Compounds," Vol. 1, pp. 10-12. The test is described in nearly all text books and laboratory manuals of organic chemistry.

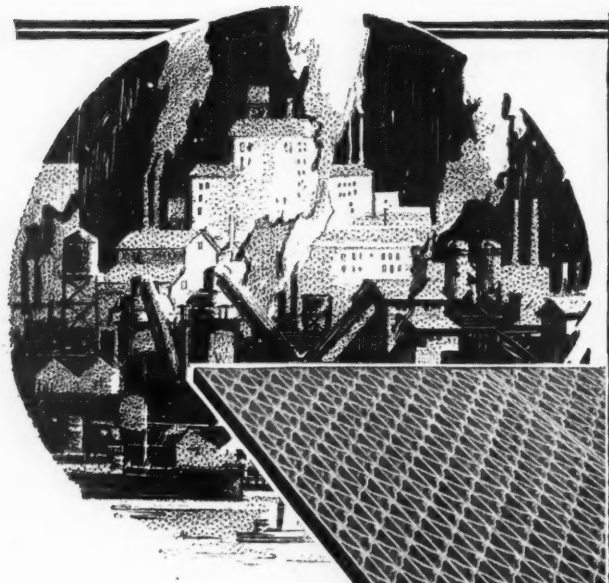
2—Proc. Am. Soc. Testing Materials, 1922, Part 1, p. 777. Method D. 129-22 T. See also U. S. Bureau of Mines Technical Paper 323A, U. S. Government Specification for lubricants and Liquid Fuels and Methods for Testing, p. 84.

3—Waters, C. E. U. S. Bureau of Standards Technologic Paper No. 177, Sulphur in Petroleum Oils, p. 8. See also Proc. Am. Soc. Testing Materials, 1922, Part 1, Page 780, Method D 130-22 T.

4—Lassaigne, Comp. rend. 16, 387, (1843).

5—Remsen, Ann. 3, 134 (1881-2). Keherer, Ber. 35, 2523 (1902). Grabe, Ber. 17, 1178 (1884). V. Konek, Z. Angew. Chem. 17, 771 (1904). Taube, Ber. 32, 3150 (1899); Chem. Ind. 26, 26 (1903).

6—Mulliken, S. P., Work cited.



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(P-158)

Sectional view Fig. 128 screwed, Jenkins Extra Heavy Bronze Globe Valve

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folded twice and moistened thoroughly with a solution of lead acetate (normal). (i) Then boil the contents of the tube *gently* until steam is seen to condense above the gallery of the tube. Remove the filter paper. If sulfur is present, a distinct brown or black spot will be observed against the white background of the filter paper. (j)

(a) The method may also be used for the detection of sulfur in organic compounds, or nonaqueous solutions of organic compounds.

(b) Copper tubes have been used but are not as satisfactory as the pyrex glass tubes because of their tendency to burn through at the temperature most desirable for the test. There seems to be no reason why a copper tube should fail to give the test provided it does not burn through; but it is doubtful whether such a tube has any advantage over the pyrex glass tube. The dimensions of the pyrex tube are approximately: length, 4 inches; outside diameter, 7/16 inch.

(c) It is advisable to use a pair of goggles before beginning to heat the sodium, as small particles of metal may fly out of the tube.

(d) Where the substance to be tested is believed to contain less than 0.10 per cent sulfur, use 10 drops.

(e) Any type of burner that will produce a full red heat in the tube may be used. A lower heat than this is not as satisfactory. Where natural gas is employed it may be advantageous to use a small blast lamp, moving the burner around if necessary to accomplish the heating. The tube must not be allowed to burn through during the heating; and after heating, it must not be broken while still so hot that the sodium takes fire. If either of these things happens the sulfur is oxidized to sulfate by the sodium peroxide formed during the burning of the sodium. Although sulfur, when present in considerable amounts in the original oil, may be detected in the leach solution as sulfate with barium chloride, small amounts of sulfur are not readily detected in this way and may even be missed entirely. The tube should therefore be allowed to cool thoroughly at room temperature before crushing in the mortar.

(f) Goggles should be worn during the crushing of the tube in the mortar and also while water is being added to the sodium.

(g) Where the operator is inexperienced in making this test, 3 to 5 c.c. of ethyl alcohol may be used first in taking up the sodium melt, with the later addition of enough distilled water to make a leach solution of 10 c.c. The use of ethyl alcohol in the test, however, is not in general recommended.

(h) When the solution is too strongly acidified with HCL, the lead chloride formed on the paper at the mouth of the tube may mask the black or brown color of the lead sulfide. When this takes place, the presence of sulfur in small quantities may be overlooked. Only 3 to 5 drops of HCL (Sp. Gr. 1.19) in excess should be used. A tiny piece of litmus paper placed in the tube will serve as an indicator.

(i) This form of tube is suggested to prevent any lead acetate from the moistened filter paper from running down into the solution being tested. If this occurs, the test must be repeated, as the sulfur, particularly when present in only small amount, may be completely precipitated as lead sulfide, from which hydrogen sulfide is not liberated by dilute acids. Sulfur, when present in considerable quantity, may be detected in the leach solution by the addition of lead acetate; but when the amount of sulfur present is very small the precipitate of lead sulfide may be so slight as to escape notice.

(j) This test has been found by the writers to be considerably more delicate than the test with sodium nitroprusside, although the sensitivity of the latter reagent depends to a certain extent upon the concentration of sodium hydroxide. The placing of the filter paper moistened with lead acetate completely over the mouth of the tube insures that all of the hydrogen sulfide will come in contact with lead acetate. Furthermore, the brown or black coloration obtained when sulfur is present is much more readily observed against the white background of the paper than when the latter is introduced entirely into the tube as is usually done. On oils containing as little as 0.02 to 0.03 per cent sulfur, a distinct test is obtained with this method when 10 drops of the oil are used in the heating with sodium. In general, if the leach solution contains 0.004 mg. per c.c. or more of sulfur, the sulfur can be detected in the manner described.

Experimental Work

THE main course of the experimental work leading to the method given above will be briefly stated.

A 1 per cent solution of sulfur (flowers) in petroleum medicinal oil was carefully prepared.[7] By taking definite amounts of this standard sulfur solution and diluting with fresh medicinal oil a series of standard solutions was obtained containing progressively smaller percentages of sulfur. Using these solutions, the details of the method as given above were gradually developed. In the early work it was found that the sulfur in an oil containing 0.20 per cent of this element could be readily detected with the method as given. When the test was carried out as outlined above (except that the use of lead acetate was replaced by adding sodium nitroprusside (1:500) directly to the alkaline leach solution) a very faint coloration was obtained with the oil containing 0.20 per cent sulfur. Fairly positive results were obtained in this way with oils containing 0.30 per cent of the element.

The next work was done on three crude oils, containing respectively 0.2, 0.3, and 0.4 per cent sulfur as determined by the oxygen-bomb method. Sulfur was detected in all three of these, both with sodium nitroprusside and with lead acetate, although the test with the nitroprusside was very weak in the case of the 0.2 per cent oil. Lead acetate, when applied as outlined in the method above, gave a very positive test, even with the crude containing 0.2 per cent sulfur.

Tests were also performed on a sample of Cabin Creek crude, containing less than 0.1 per cent sulfur as determined by the oxygen-bomb method. Three trials were made, using respectively 5, 10, and 15 drops of the crude oil in heating with sodium. In none of the tests could a coloration be obtained with sodium nitroprusside, but in each case a very definite indication was obtained with lead acetate when used as directed in the method above given. This gave a very clear indication that the use of lead acetate, as here carried out, affords a more delicate test for sulfur than sodium nitroprusside.[8] The delicacy of the test with lead acetate was further confirmed on an oil containing 0.04 per cent sulfur. A very positive indication was obtained.

To determine whether the method could be applied for the detection of sulfur in very volatile petroleum products, 5 drops of the original 1 per cent sulfur solution in petroleum medicinal oil were diluted with 10 c.c. of sulfur-free natural-gas gasoline. Five drops of the gasoline solution so prepared were used for the test

7—As near as could be determined, the medicinal oil contained about 0.01 per cent sulfur. Determination of sulfur in the 1 per cent solution by the Carius method showed the method of preparing the solution to be amply accurate for the work at hand.

8—See also Treadwell-Hall: Analytical Chemistry, Vol. 1, 5th English Edition, p. 357.

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which was made as outlined above, using lead acetate. A positive indication for sulfur was obtained. The gasoline solution contained approximately 0.02 per cent sulfur.

TO CHECK up the work on detection of sulfur in small concentrations, a solution of sulfur (flowers) in petroleum medicinal oil was prepared containing 0.097 mg. sulfur per gram of solution, or 0.085 mg. per c.c. of solution (equivalent to 0.0097 per cent sulfur). Ten drops of this solution were heated with sodium and a positive test thus obtained using lead acetate.

To determine whether sulfur in a stable organic compound could be detected as readily as the elementary sulfur in the medicinal oil, pellets were prepared consisting largely of highly purified benzoic acid with a small quantity of normal butyl sulfone. With these it was possible to detect 0.1 mg. sulfur per c.c. in the final solution using the method given above with lead acetate. In another case that was carefully studied, a solution of normal butyl sulfone containing 0.0094 per cent sulfur was prepared in petroleum medicinal oil. Ten drops of this solution, equivalent to 0.024 mg. sulfur, were used in the reaction with sodium, making concentration in the leach solution of 0.0024 mg. sulfur per c.c., assuming that no sulfur is lost in the operation. A positive test for sulfur was readily obtained.

In preparing the solutions of free and combined sulfur in the petroleum medicinal oil, it was assumed that the oil was free from sulfur. All of the calculations given above were made on that basis. The assumption is not entirely warranted, however, as the medicinal oil was shown to contain about 0.01 per cent sulfur. Hence the lower limit of the amount of free or combined sulfur that can be detected by the method is placed at about 0.02 to 0.03 rather than 0.01 per cent.

The following work gives some indication of the relative sensitiveness of sodium nitroprusside as used in the qualitative test for sulfur. Preliminary tests were made on a solution of sodium sulfide of such strength that it just failed to give the test with sodium nitroprusside. This solution gave a positive test for sulfur with lead acetate with or without the addition of a small amount of ethyl alcohol. A portion of the original sodium sulfide solution was then diluted with nine parts of water (by volume) and still gave the test with lead acetate. The use of alcohol with this more dilute sulfide solution seemed to make the test with lead acetate a little less distinct, although it was still positive. An aqueous sodium sulfide solution, of such strength that it just gave the test with sodium nitroprusside before alcohol was added, also gave the test after alcohol was added. In the latter case, however, the color appeared to be more transitory.

In order to test more carefully the relative sensitiveness of sodium nitroprusside and lead acetate in this test, an aqueous solution of sodium sulfide was made up containing 0.0872 mg. sulfur per c.c. Solution A was made from this by diluting 1 part with 19 parts (by volume) of water; solution B was prepared by diluting 1 part of the original solution with 39 parts (by volume) of water. Tests with solutions A and B showed the following results:

Test No.	Aqueous solution of sodium sulfide containing 0.0872 mg. sulfur per c. c. Amount used for test, c. c.	Saturated NaOH solution added, c. c.	Result on addition of definite amount of sodium nitroprusside
1	10	1	Distinct coloration
2	10	2	Distinct coloration
3	10	3	Faint coloration
4	10	4	No coloration
5	10	4*	Distinct coloration

*Acidified with HCl then made just alkaline.

Solution A: Containing 0.00436 mg. sulfur per c. c. No test with sodium nitroprusside (1:500) even when added in much greater quantities than 5 drops. Faint test when considerable amounts of sodium nitroprusside (1.100) were added.

Solution B: No test with sodium nitroprusside of either concentration (1:500 or 1:100) even when added in considerable amounts. Distinct test with lead acetate.

The concentration of sodium hydroxide has a very distinct effect on the color obtained with sodium nitroprusside as indicated in the following tests:

The test for hydrogen sulfide, involving the formation of methylene blue,[9] was quite carefully tried out to determine its possible applicability to the present work. As was suspected, the test proved to be far too delicate for everyday use in the laboratory.

The inadequacy of the copper-strip test for the detection of certain forms of sulfur in petroleum oils[10] was confirmed by the following experiment: Two solutions in petroleum medicinal oil were prepared, (a) containing 0.10

9—Emil Fisher, Ber., 16, 2234 (1883).
10—Waters, C. E. Loc. cit.

per cent of elementary sulfur, and (b) containing 0.10 per cent sulfur in the form of normal butyl sulfone. At 100°C solution (a) blackened a copper strip immediately, while solution (b) produced no visible tarnishing of the metal after an hour's time.

Blank tests were made on all reagents used in the work described in this paper.

Summary

A test for the qualitative detection of sulfur is given that differs somewhat in detail from the usual procedure. Each step in the procedure has been carefully studied. Assuming that the petroleum medicinal oil used in the above tests contained about 0.01 per cent sulfur, it is probably fair to state that the test will detect sulfur in the elementary or combined form in petroleum oils when present to the extent of only 0.02 to 0.03 per cent. This is much more sensitive than the test as usually carried out using sodium nitroprusside.

Phillips Building Gasoline Plant in Panhandle

Staff Special

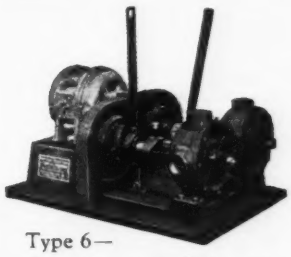
TULSA, Nov. 21.—Phillips Petroleum Co. will erect a natural gasoline plant on its newly acquired properties in Gray county in the Panhandle fields of Texas. The plant will be located in section 88, Block B-2.

F. E. Rice, general superintendent of the gasoline department of the company, is now in Texas in connection with the construction work which is expected to be completed in about four months. The plant will have an initial capacity of about 15,000 gallons of gasoline per day or about 10,000,000 cubic feet of gas. It will be designed with a view to later enlargement. It will be of the oil absorption type.

General Electric Man Gets Medal

SCHENECTADY, N. Y.—The Hughes medal, the first one of which was presented in 1913 to Dr. Alexander Graham Bell, has just been presented to Dr. W. D. Coolidge, assistant director of the research laboratory of the General Electric Co. here. It was given Dr. Coolidge by the Royal Society for distinguished work on X-rays and the development of efficient apparatus for the company's production.

TOETERVILLE, Ia.—C. C. Huntley recently purchased the entire stock and equipment of the Toeterville Oil Co. here, and is now sole owner. Mr. Huntley will operate under the old name. O. F. Decklever, L. H. Langrock and H. F. Grube are the retiring members of the old company.



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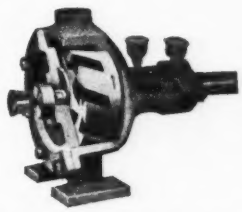

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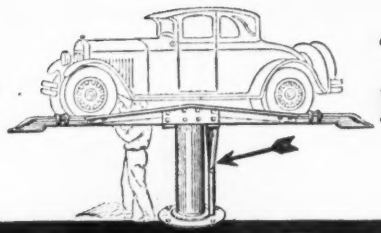

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Domestic Gas Machine Uses Motor Gasoline

CLEVELAND, Nov. 18.—A domestic gas making machine which uses only a good grade of motor gasoline as raw material, has been developed by Henry Gerspacher, 10006 Carnegie Ave., Cleveland, who is operating as the Cleveland Suburban Gas Co. Mr. Gerspacher says his machine can produce more than 1,000 cubic feet of gas from a gallon of gasoline, or a cost of less than 20 cents per 1000 cubic feet. The B.t.u. content of the gas has not been ascertained but the flame seems to be as hot and will cook as fast as any manufactured gas.

Simplicity and economy in both initial cost and operation, is claimed by Mr. Gerspacher for his machine. The device consists of two cylindrical tanks such as are used for heating water in homes one of which is felt lined; a small one-stage air compressor with ¼-H.P. electric motor; a pressure switch for starting and stopping the motor that drives the compressor; a pressure reduction valve; two pressure gauges, and piping and pipe fittings.

Air from the compressor passes into one of the tanks which contains a chemical the nature of which the inventor holds secret. After passing through the chemical, at a pressure of 5 to 25 pounds, the treated air passes through the reduction valve and enters the felt-lined tank which contains the gasoline at not more than 4 pounds pressure. After passing through the gasoline the gas is ready for use.

The system contains at most five gallons of gasoline, thereby meeting most fire regulations about the storage of gasoline in homes. However, the machine may be placed in an out building and the gas piped into the house like central plant gas.

The initial cost of this system, when it is in production, is expected to be close to $200, Mr. Gerspacher estimated. The machine, for which patent is pending, is designed for use where natural gas or central plant manufactured gas is not available but where there is electricity. Mr. Gerspacher said the chemical would have to be replaced only every four or five years under average household use of gas.

Explosion Kills Oil Man

TULSA, Nov. 21.—U. S. Tubbs, president of the Acree Oil Co., was fatally injured at one of the company's tire and gasoline stations at Norman, Okla., on Nov. 14. Investigation of the explosion and fire in which he was injured indicated that he lighted a match in a room which contained vapors from a leaking gasoline container.

The Editors' Viewpoint

National Petroleum News

Where Mistakes are Costly

MISTAKES made by giving an incorrect quotation on refinery products on the part of the refiner, or in not correctly reading the quotation on the part of the buyer, have more effect on the market than the average man thinks, according to one refiner who sends NATIONAL PETROLEUM NEWS a statement of what happened in his own plant.

On an inquiry for a large amount of wax this company intended to quote 2¾ cents f.o.b. refinery, the market being 3 cents at the refinery and the company being able to get this amount for most of the wax it could handle. Due to the size of the inquiry, however, the quotation was made at ¼ cents under the going price at the refinery.

Due to a mistake on the part of the refiner's office force the quotation went out as 2¾ cents destination. The company caught the mistake before the letter was received and wired a cancellation of the price. The customer, who was interested in buying wax as cheaply as possible, showed the letter around to several brokers, however, and the effect was a temporary flurry in the wax market in this particular territory.—V. B. G.

Be Careful, Give True Picture

HERE is how all the talk of over-production, waste, the need for conservation and so on, indulged in by the oil industry has appealed to Senator William E. Borah, as expressed in an address he made sometime back in Denver.

"A short time ago the producers of oil appeared in Washington and advised the government that there was an 'orgy of production,' that many oil fields were being damaged, or ruined, through careless or hasty drilling operations, and revealed beyond peradventure that one of nature's most generous donations to the service and comfort and luxury of the people is being literally, shamelessly wasted in a manner 'without precedent in all past history.'

"Having made this confession, they asked that the government exert its sobering influence upon this humiliating debauch, this saturnalia or recklessness and shortsighted greed.

"The statements and admissions of the producers in the face of the report of the oil board constitute not only an offense against every man, woman and child in the land, but in effect a conspiracy against the security of the nation itself. And when you link the confession of the producers with the admissions of no remedy upon the part of the government, it constitutes about the most important problem which could present itself in the growth and development of the country.

"The improvident manner in which the natural wealth of the country is being thus gorged by individuals, wasted and exhausted, should no longer, and can in reason no longer, remain a matter of unconcern to the people of this country. It is that kind of abandon which undermines the character and impoverishes the people—for upon the people at large will be visited at last the results of such a program. It is that kind of prodigality which bankrupts a community or a nation. If the waste and exhaustion of our natural wealth simply interrupted the gathering of wealth by the few immediately engaged, that would be unfortunate enough, but it embarrasses and impoverishes a whole people and puts the people and the government alike in jeopardy. The problem is in every sense of national import and of the utmost public concern."

While the senator is noted for being somewhat wild in his ideas and also wild in his statements, nevertheless, the fact that the oil industry's various statements made this impression upon the senator's mind, behooves those in the industry who undertake to talk, to watch their statements a little bit more and do a bit of editing on occasion.

The public doesn't read carefully, any more, in fact, than the oil industry reads carefully. Everyone goes pretty largely by impression—impressions gained, perhaps, largely from a few words, or a few sentences, or a phrase.

When the industry has anything to say on the oil situation, it should make certain that it is saying it in a language that the public will undersand and from which the public will get the exact picture that the oil industry wants it to get, and providing always, of course, that the picture be true.—W. C. P.

Tulsa Should Have Air Mail

OF ALL industries in the country, the oil industry should be the most interested in air mail service, but for some reason it has not bestirred itself enough in regard to air mail service in and out of Tulsa to get it. Oklahoma City—a point that can't possibly have but a fraction of the amount of long distance mail moving to it—got the jump on Tulsa, the result being that the southwestern air mail service comes up from Dallas and Fort Worth to Oklahoma City, when it might just as well have gone through Tulsa. Tulsa has an A-1 airport and it has the business to make that air mail service profitable.

Showing how important the extension of this service into Tulsa is, is the fact that Louis McNally, secretary of the Wadhams Oil Co., Milwaukee, Wis.—a large petroleum distributor—has filed a request with the Air Information Service Division of the Department of Commerce at Washington to see if it cannot in some way extend air mail service to Tulsa.

If those interested in air service to Tulsa were to write the Air Mail Division, undoubtedly that government branch would be much surprised at the volume of business it can get by extending the service.—W. C. P.

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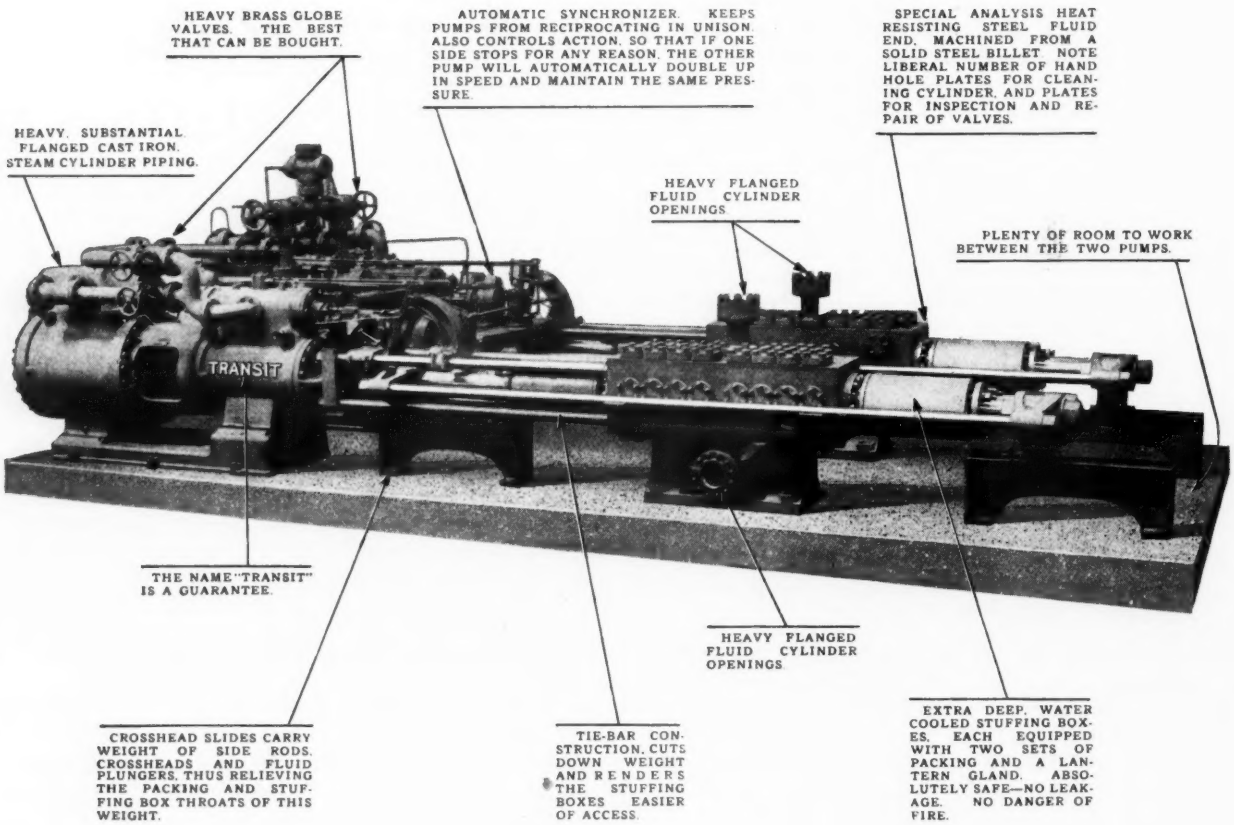
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Calk Welding Failure Halts Test Of Cracking Drum at 1190 Pounds

By C. H. Haupt*

WITH the idea of obtaining conclusive data as regards distribution of stresses in a riveted drum used as a reaction chamber for cracking oil under pressure, the general engineering department of the Standard Oil Co. (N. J.), in May 1927, made a most interesting hydrostatic test on a high pressure reaction chamber approximately 6 feet in diameter by 40 feet long. This test was conducted by A. J. Ely, engineer of tests, and F. L. Newcomb, inspector of pressure equipment.

There were present a number of representatives of manufacturers and users of high pressure vessels. The method used in conducting the test, the general arrangements for making measurements and the allowance for errors, were generally approved by the visiting engineers who were given an opportunity of discussing the proposed procedure.

Those present agreed that unusual precautions had been taken to secure accurate data, both in the way of careful measurements and in the type of instruments used.

C. H. HAUPT

*Chief engineer, Standard Oil Co. (N. J.)

The drum used was typical in design of a large number which are operated at 350 pounds pressure per square inch, with the safety valve set for 390 pounds per square inch. The normal operating temperature is about 850 degrees Fahr. In manufacture, these drums are ordinarily subjected to a hydrostatic pressure of 750 pounds per square inch to test for tightness of seams. The drum tested is shown in Fig. 1 which illustrates quite clearly the method of riveting as well as the general assembly of the different parts .

THE material was low carbon steel plate 2 inches thick, made by the open hearth process, excepting the manheads, which were of cast steel. The shell consisted of five sections each, approximately 8 feet long. Each section had one longitudinal butt joint, quadruple riveted, with an inside and outside butt strap. The middle and two end sections were slightly smaller in diameter than the other two, so

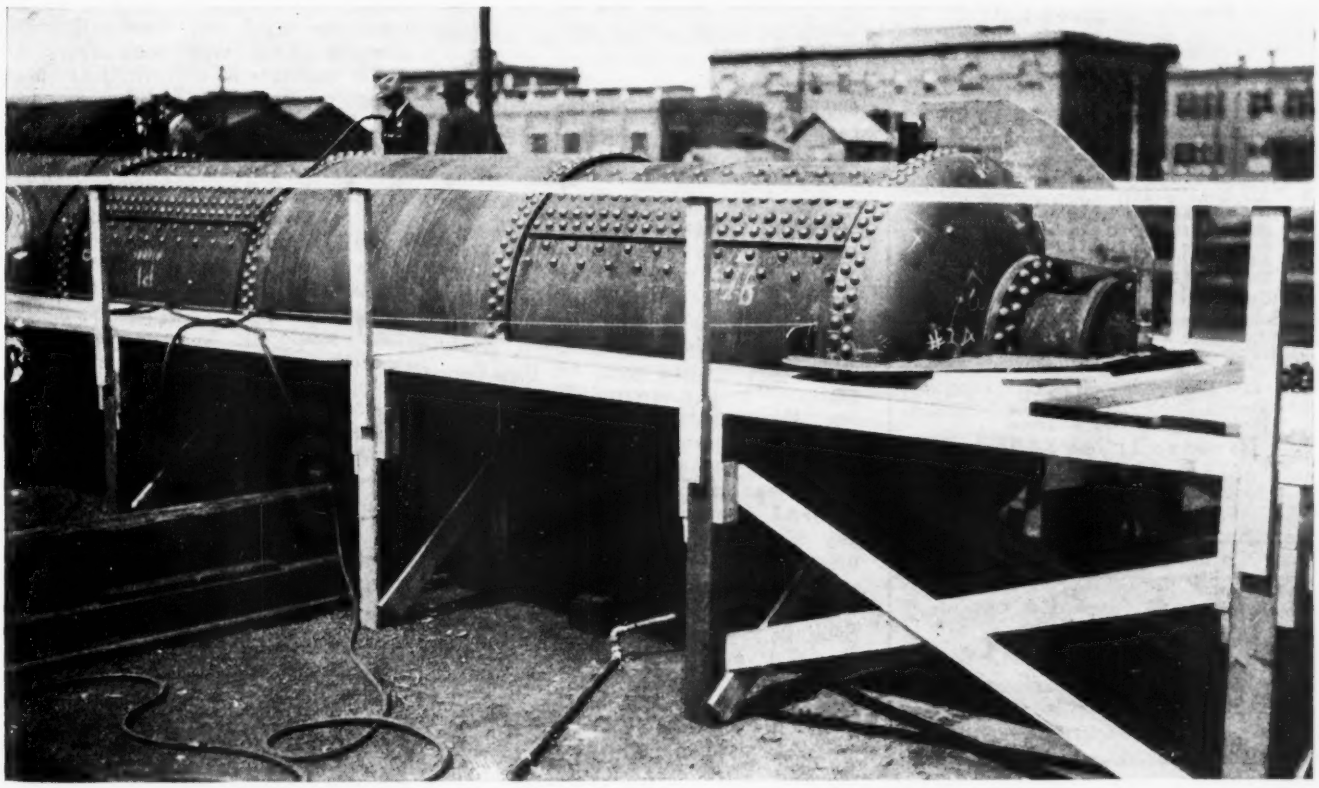

Figure 1—View of high pressure drum 6 feet in diameter by 40 feet long, showing method of riveting and general construction

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that the smaller sections could be joined to the larger ones and to the heads by a double riveted lap joint.

The steel at these joints was machined and the larger sections shrunk on to the smaller ones, after which the rivet holes were drilled. The heads were identical, having a knuckle radius of 6 inches and a head radius of 36 inches, which closely conforms with boiler code design.

Each head had a circular hole 20 inches in diameter cut from the center, over which a manhead 16 inches long and having an inside diameter of 18 inches was riveted. All seams on both the shell and heads, inside and outside, were electric calk welded. Before securing the drum for test it had been subjected to the usual test for tightness.

The stress test procedure consisted of applying the desired pressure and then determining the strain at various points on the drum and the distortion of the heads. In order to determine strains, 2-inch gauge lengths were laid out in four quadrants on each head and at various locations on the shell. In all cases strains in both directions were taken.

They were determined by means of Berry strain gauges, which are instruments measuring elongation in ten thousandths of an inch. By measuring the elongation, or stretch of the metal, the stress existing at that point can be definitely determined as long as it remains below the elastic limit of the metal.

IT HAS long been definitely established that the stress in any metal, when below the elastic limit, is the product of the elongation per inch and the modulus of elasticity, which for steel is known to be 29,000,000. When the elastic limit has been exceeded, the per cent of elongation is an indication of the amount of distortion which has taken place.

The distortion of the heads was measured from templates on four quadrants of each head, the templates being mounted on the shell and braced for rigidity. On the quadrant on each head, accurate distortion was determined from Ames dials mounted on one of the templates. These measured distortion in ten thousandths of an inch. Accurate measurements were also taken by means of an 8-inch strain gauge at various points along both circular and longitudinal seams to note any slipping of the joints. Fig. 2 illustrates the methods for securing strains and distortion of the heads.

Both strain gauge and template readings were taken at the start of the test and when the drum was under pressures of 400, 800, 900, 1,000 and 1.100 pounds per square inch. In addition, the same readings were taken with the pressure released after 900, 1,000 and 1,190 pounds, in order to note any permanent deformation resulting from those pressures.

In increasing the pressure from 0 to 1,100 pounds per square inch, observations were again taken at pressures of 400, 800 and 1,000 pounds per square inch. Similar strain gauge points were laid out on the inside of the drum and readings taken from them before the test was started and after the drum had been subjected to a pressure of 1,000 pounds, and again after the pressure had reached 1,190 pounds per square inch. This was the highest pressure obtainable, due to the failure of some of the calk welding, which prevented higher pressure from being reached because of excessive leakage.

Under the test pressures reached, there was some distortion of the heads, due primarily to the reshaping of the heads. When new, they contain irregularities caused in manufacture, and the pressure tended to straighten out these irregularities. The greatest distortion was noted around the knuckle and near the manhead flange. The radius of the knuckle tended to increase due to the pulling in of the head, and the flat spots in the head were rounded out. These flat spots occurred at different points on each head.

The total longitudinal distortion of the head was in all cases less than 0.2 inches under the pressure of approximately 1,200 pounds. In no place on the drum has there been any sign of unusual stresses, although it is evident that there have been localized stresses exceeding the elastic limit, which tended to deform the steel and thus relieve the stresses. This was seen from the small permanent deformations noted after pressures had been released.

SOME of the results were most unexpected, particularly on the heads and near joints on the shell. For instance, there were many points at which there was a reversal of stress in going from a lower to a higher pressure. At first some of them would be in compression and later in tension, and vice versa. However, in most cases, adjoining points and points in similar locations elsewhere on the drum clearly indicated that these unexpected results were correct.

The only explanation that can be offered for them is the irregularity in shape and the local stresses, probably existing from either manufacture or fabrication, which required an appreciable test pressure to overcome.

The maximum test pressure reached corresponds to three times the pressure at which the safety valve was set, and under that pressure there seemed to be no unusual sign of stress throughout the drum; in fact,

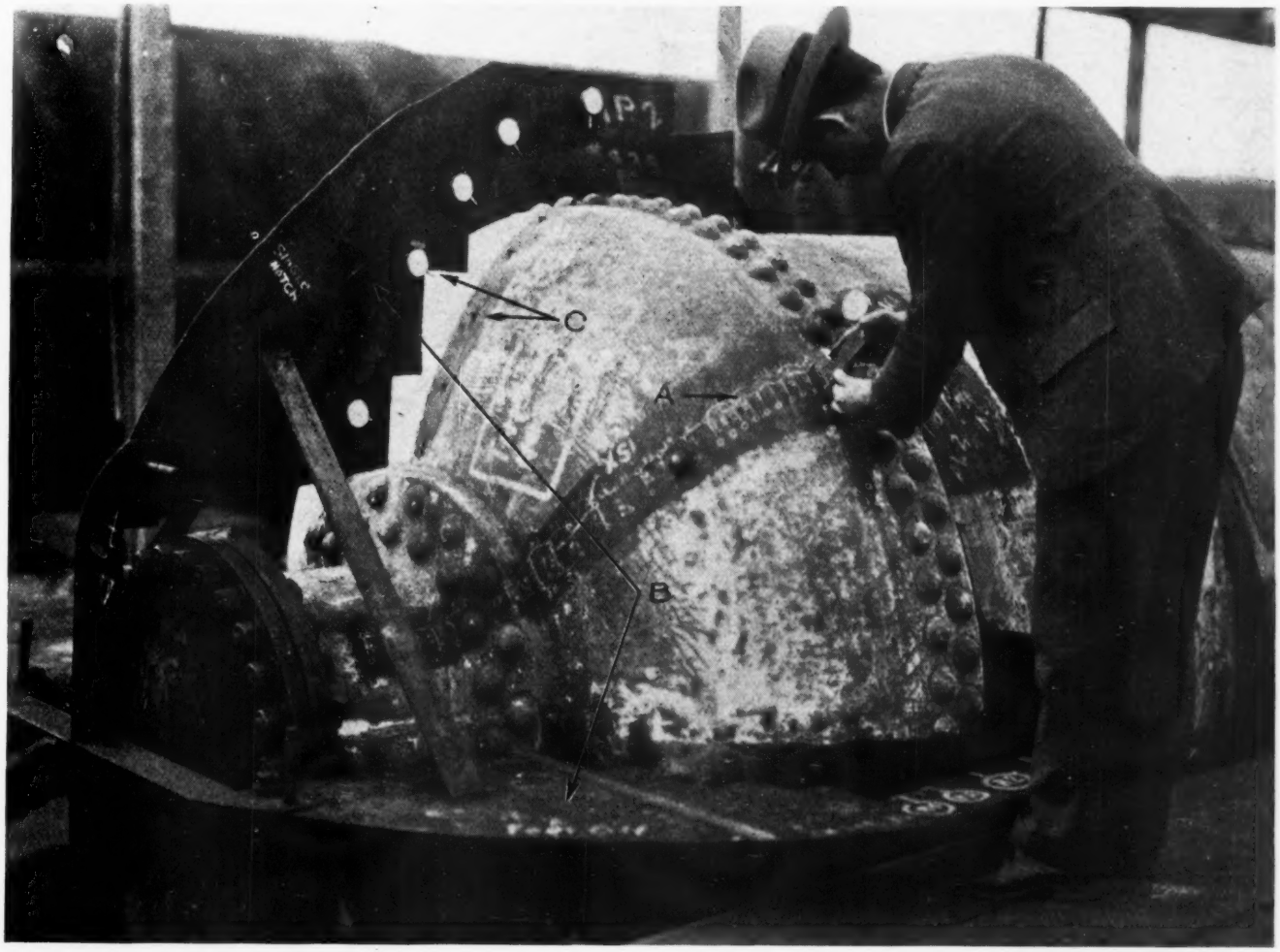


Figure 2—View of head showing strain gauge points (A), head of templates (B), dials and points (C) on head for measuring minute distortion. Strain gauge reading is being taken

the only point of failure was the calk welding.

The information secured from these tests, when co-ordinated with the physical properties of the steel obtained both cold and when subjected to a temperature of 850 degrees Fahr., indicates that these drums are designed so as to operate well within the point approaching the initial yielding of any appreciable amount of the material.

The results obtained on this test were so interesting that it was felt desirable to secure data, particularly on the heads, at higher test pressures. Consequently, in order to overcome the leakage difficulties, a special drum, consisting of one section 8 feet long, equipped with two heads, was secured. To further reduce leakage troubles, the shell of the special drum has been made 2½ inches thick and the longitudinal butt joint has been designed to have a higher joint efficiency than the standard construction provides.

In order to make the information obtained from this test as complete as possible, one of the heads is identical with the heads on the drum previously tested, while the other head is identical except that it has no manhead opening. In this way it is hoped that any weakening effect of the manhead opening can be noted. Tests on this drum are now under way.

THE problem of strains occurring in the heads of pressure vessels is of such great interest to the engineering profession and to the many industries using these vessels that it is believed any contribution that can be made by any industrial firm in securing such data would be heartily welcomed by the industrial world.

The Linde Air Products Co., 30 E. 42nd St., New York City, in conjunction with the United States Cast Iron Pipe & Foundry Co., laid a line of cast iron pipe in Burlington, N. J. in the fall of 1926 for study and experimental observation, in which line several types of joint were used in an effort to obtain data as to their relative value.

The experiment was prompted after steel pipe was found to be short-lived in cases where brackish or saline water stood within a foot or two of the surface for a considerable part of the year. The first cast iron pipe with bronze-welded joints of the collar type was laid in a southern California town where such water conditions prevailed.

Early tests seemed to show that the collar type of joint was strongest and it was adopted.

An investigation in 1924 revealed results of a test in which collar, V and combined collar and V joints had been used. This showed that the simple V joint failed along the bevel whereas the other types failed in the cast iron adjacent to the bronze. Data in this case were based on strips cut from the joint and then tested. Since the adhesion of the weld metal to the machined bevel was considered of doubtful value and since the collar-type joint failed in the pipe, it was concluded that the latter was the preferable design.

This cut shows the ductility of the metal deposited by welding. These specimens are all weld

Welding Oil Pressure Cracking Vessels

By R. Stresau*

THE oil refining, more specifically the oil cracking industry has put demands on high pressure, high temperature cracking stills which could only be attained by welded construction.

The combination of size and wall thickness required in many instances are beyond the possibilities of riveting, hammer welding, or forging. The possibilities of welded construction are apparently unlimited for if the demand arose for a vessel beyond shipping possibilities, sections could be shipped and assembled in the field.

This has been accomplished in that one section weighing 390,000 pounds was joined to another weighing 280,000 pounds by a field weld 8 feet in diameter joining 2¾-inch material.

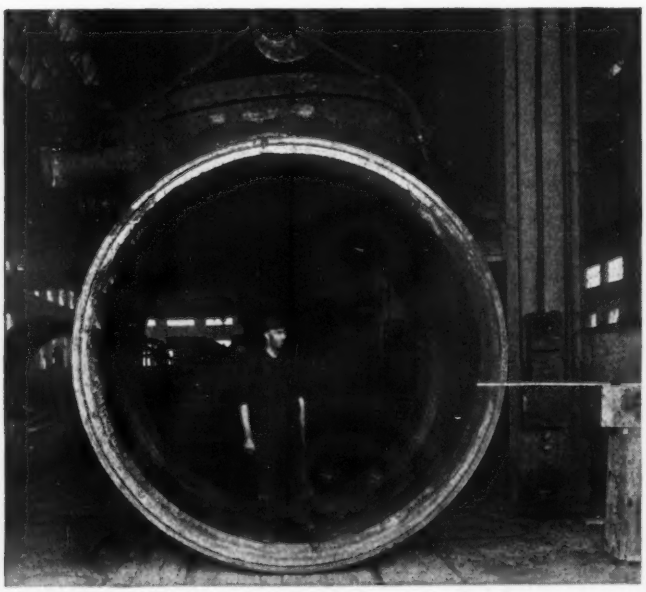
The type of welding required for still construction must of necessity be beyond question in regard to physical characteristics, both at ordinary as well as high temperatures. Ultimate tensile strength, elastic limit, elongation and uniformity must be equal to or better than those of the steel plate joined. Not only the weld material itself but also the metal of the plate adjacent to the weld must develop these characteristics.

The type of design required for stills operating at 900 degrees Fahr. and pressures of 1000 pounds per square inch or more must also be such that the material used in every part of the vessel is equally stressed without using large masses of low stress sections, the unequal heat expansion of which would set up stress conditions difficult to pre-determine and the compensation therefore very difficult.

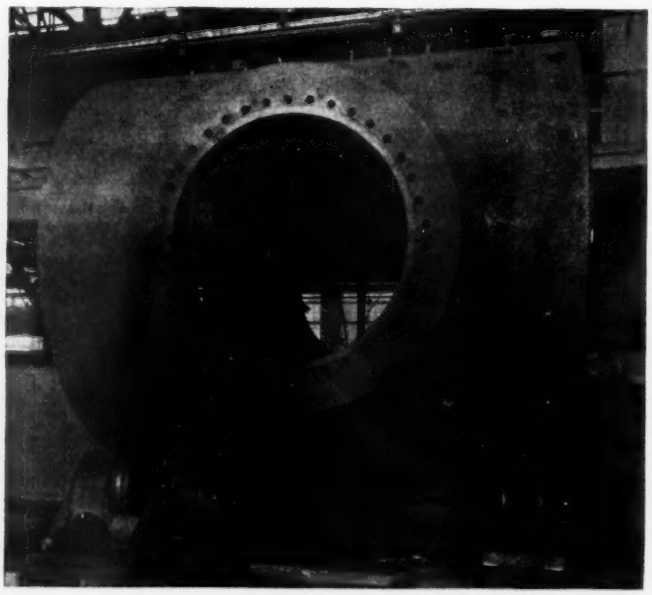
ALL of the above requirements have been met by the process of manufacturing pressure stills developed by the A. O. Smith Corp.

The process of welding used has been developed over a period of 11 years not only experimentally, but by

*Research Engineer, A. O. Smith Corp., Milwaukee.



Section of a still showing the reinforcements and connections to the tower



Section of a bubble tower with 51-inch opening

a mass of daily production that has never been equalled.

The mass of production welding may be indicated as follows:

Automobile Rear Axle Housings—2,100,000—representing 2,400 miles of ⅛-inch to 3/16-inch welding under constant vibrational and torsional stress.

Oil Field Casing Couplings—1,300,000—representing 80 miles of ¾-inch plate welding and the jointing of 1620 miles of casing.

Heavy Plate Stills—650 vessels represent 252,000 tons of plate from 1½-inch up, averaging 3-inch.

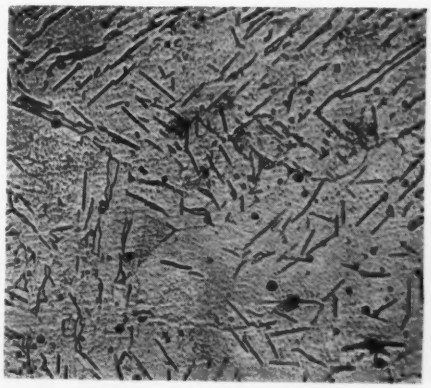
This production was made over a period of 10 years and no weld failure under these varied operating conditions has been reported.

The reasons for the above accomplishment are many, a number of which will be given in detail:

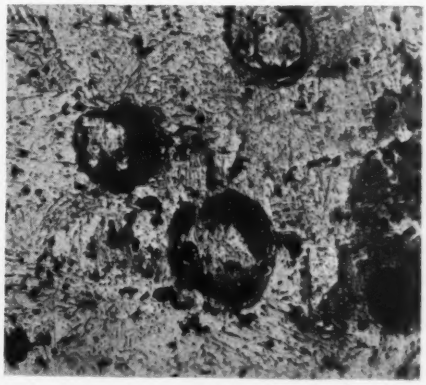
1. The characteristics of the deposited steel in the weld.

In a properly functioning metallic arc welding, the essential characteristic is one of distillation. The high temperature of the arc vaporizes the steel of the weldrod which later condenses upon contact with the cold steel being operated upon. It is the vapor which forms the conductor.

This characteristic of the arc results in phenomena, the control of which determines the value and character of the steel deposited. Many

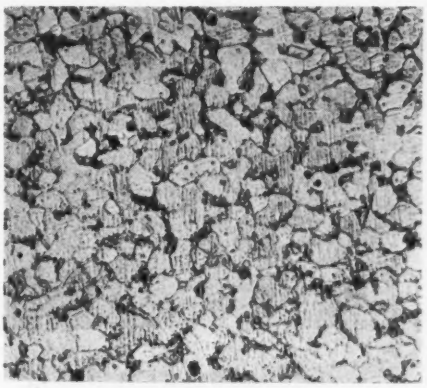


No. 1—Magnified 500 diameters

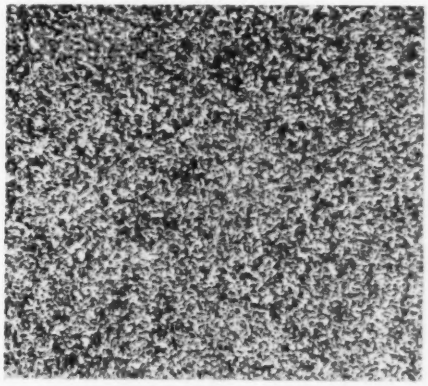


No. 2—Magnified 100 diameters

Photos 1 and 2 show oxide inclusions and nitride needles in great profusion and are of welds made with coated rods whose action, however, was not adequate to prevent air contamination

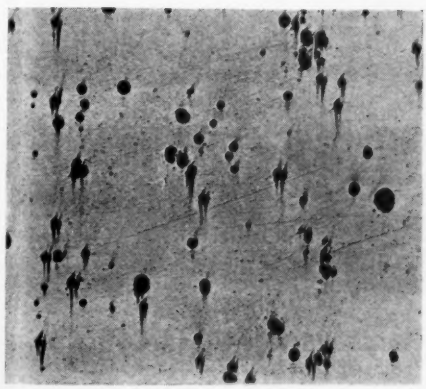


No. 3—Magnified 500 diameters

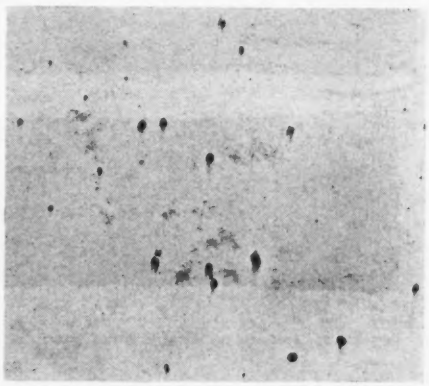


No. 4—Magnified 100 diameters

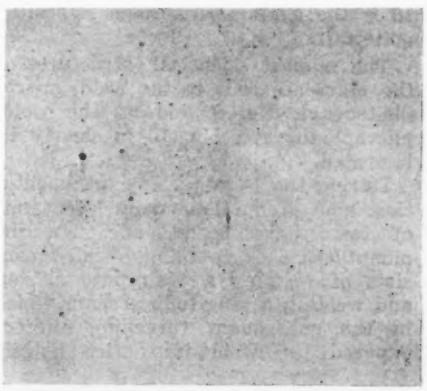
Photos 3 and 4 show welds made with adequate preventive methods, the complete absence of oxide inclusions



No. 5—Magnified 100 diameters. Somins in plate steel

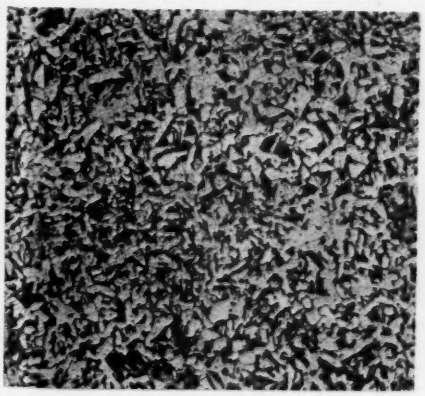


No. 6—Magnified 100 diameters. Somins in weldrod

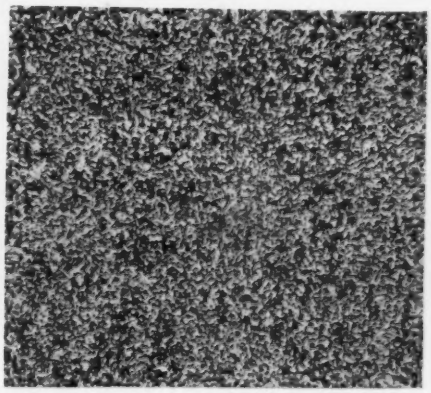


No. 7—Magnified 100 diameters. Somins in weld

Photos 5, 6 and 7 show difference in somins inclusions in weldrods and plate steel and the decreased number of somins in the deposited metal



No. 8—Magnified 100 diameters. Plate not affected by welding



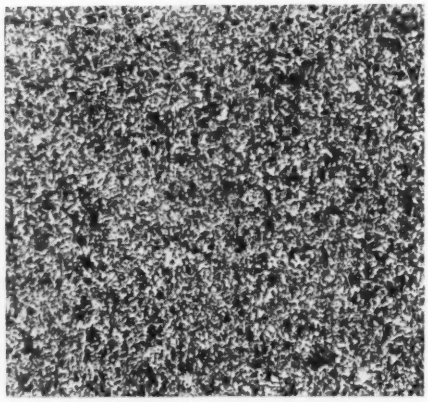
No. 9—Magnified 100 diameters. Plate adjacent to weld, structural change effected by welding

of the somins or non-metallic inclusions break down during this process and some of the constituencies of the somins escape as permanent gases. The deposited steel therefore, if no contamination takes place, is a cleaner steel than the weldrod from which it originated.

The greatest source of contamination is the air and from the air oxygen and nitrogen are introduced in arc welds unless the process of deposition is so designed that these impurities can not enter.

That this has been accomplished, the microphotographs above illustrate very clearly.

With correct proportioning of the



No. 10—Magnified 100 diameters. All weld

energy of the arc, the melting effect thereof and the rate of cooling of the deposited metal, complete fusion and amalgamation of the side of the welding grooves with the deposited metal is attained. Also the grain structure of the adjacent steel plate as well as the deposited material can be controlled to the point that their structure is better than that of the normal structure of the plate.

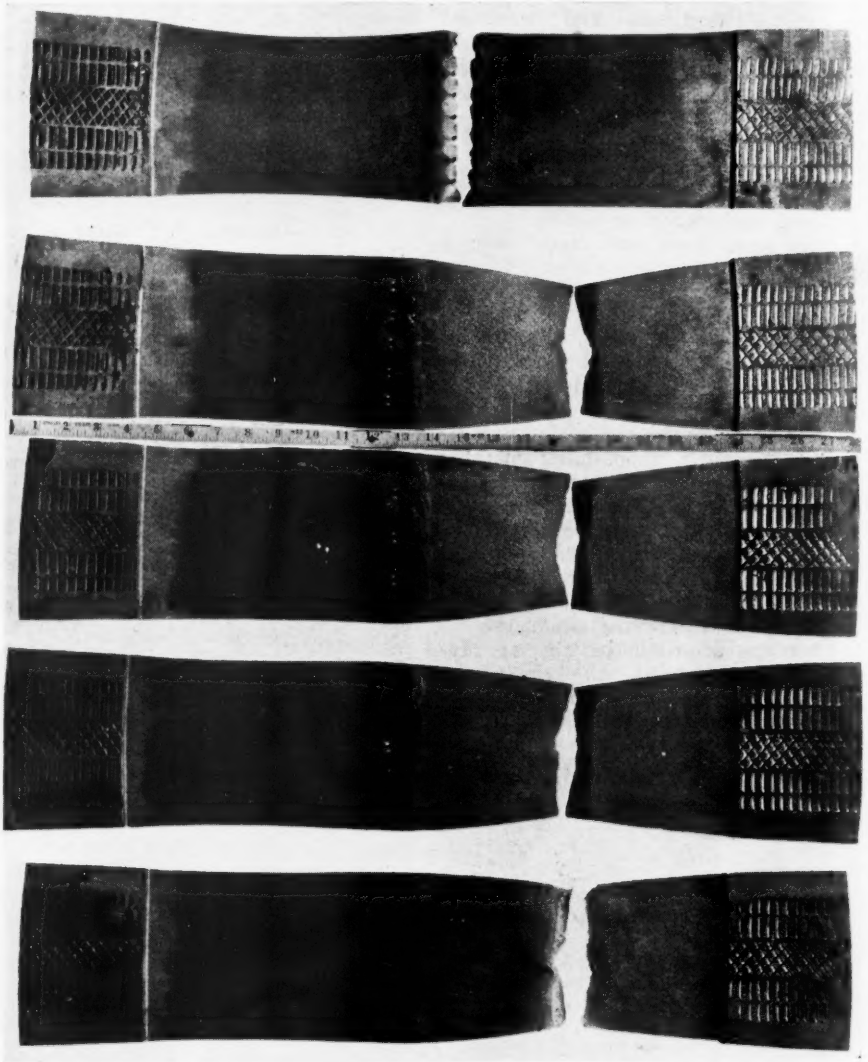
Weld material made in this way can be changed structurally and in physical characteristics similar to the plate steel by heat treatment.

Photo No. 8 is of the plate not affected by the weld. Photo No. 9 is of the grain structure refined of plate adjacent to the weld and No. 10 is the grain structure of deposited material.

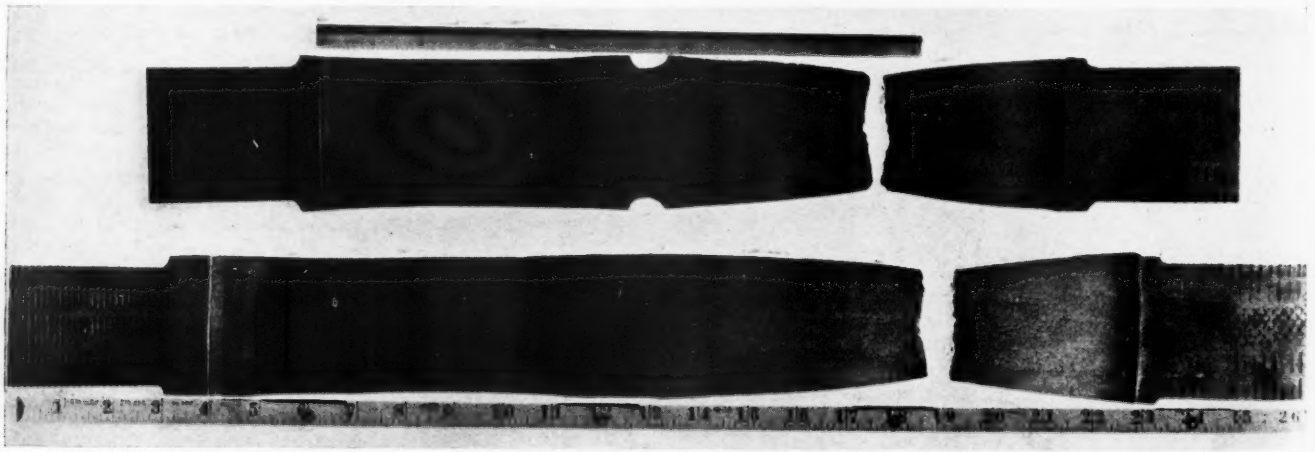
The almost identical structure of the plate adjacent to the weld, microphotograph No. 9 and of the weld, microphotograph No. 10 is clearly illustrated.

During the 10 years of experimentation and production many thousands of tests have been made. In the manufacture of couplings, which consists of forming a plate into a ring and welding a longitudinal seam, which in the subsequent threading thereof exposed the weld its entire length, gave an opportunity to inspect thousands of feet of welding every day for years.

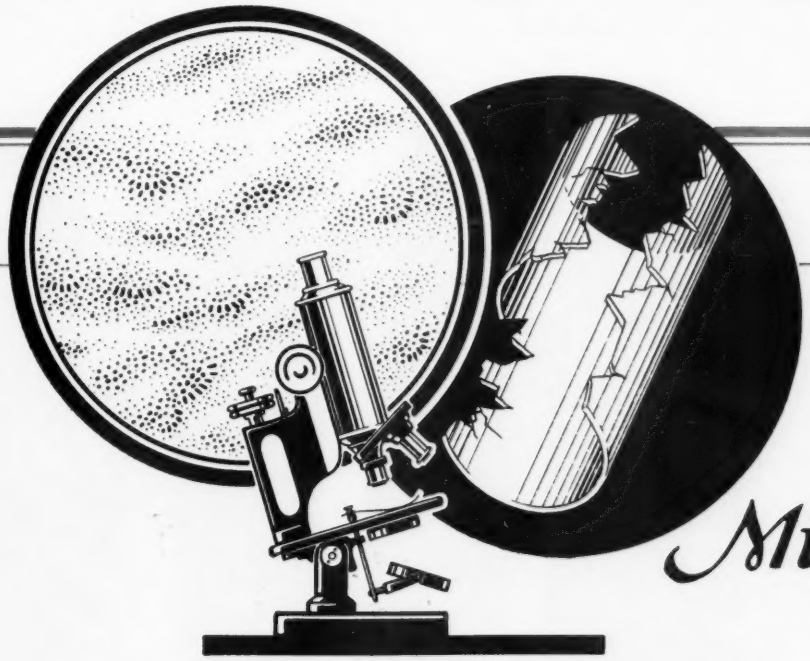
Welds have been developed with different characteristics. In the manufacture of couplings the weld had to have not only equal strength and ductility, but also equal machinability compared to the plate. Non-uniformity of the weld would result in a chaser breakage so great as to be uneconomical. The constant curl of



Results of test to determine how great a reduction welds could stand before they become weaker than the plate



Further tensile strength tests showing welds with area reduced in one and not in the other—break in both cases occurring in plate away from weld



Under the Microscope

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"Why is it your cylinders clean up so much easier than any other?"—is often asked of us.

Under the microscope, the inside of most cylinders that have been in use for some time show hills and valleys—the effect of "weathering" or pitting. The precipitation from gasoline fills up these "pits" and the cylinder itself takes on a yellowish tinge, which no amount of cleaning will remove. Displayed through such a cylinder, any gasoline will *appear* to have a yellow color.

No amount of usage—or passage of time—will cause deterioration in our cylinders. Under the microscope, their inner surfaces, even after years of service, will show up just as smooth, with the same high lustre and polish as when they first left our factory. That's the reason they can be cleaned perfectly—at any time.

That's one of the big reasons, too, why over 90% of all leading pump makers use cylinders made by the Hyatt Glass Company—the only manufacturer in America making pump cylinders exclusively.

Such preference must be deserved—and founded on merit—and merit alone.

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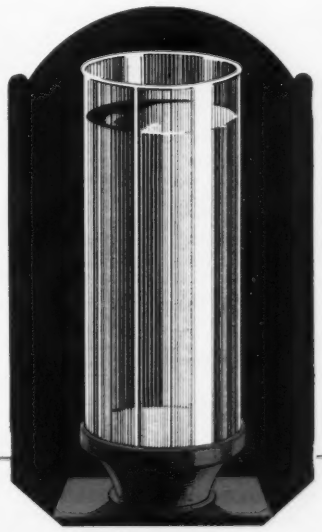

Both our "Water-Clear" and "Super Water-Clear" Cylinders are made under our secret formulas, which absolutely prevent "weathering" or "pitting" with age. They retain their lustre and highly polished surfaces indefinitely—and *do* display any gasoline to better advantage, bringing out all the sparkling brilliance of water-white gasoline, or the various colored gasolines.

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The Hyatt Glass Co.

Poteau, Okla.

SUPER WATER CLEAR

shavings 30 - 40 feet long produced by the boring tool in which a weld is spaced every 4 to 5 inches attest the uniformity as well as the conformity to the demand that the machinability of the weld shall equal that of the plate.

The weld has been developed for the welding of stills in which the plate is made to the following specifications:

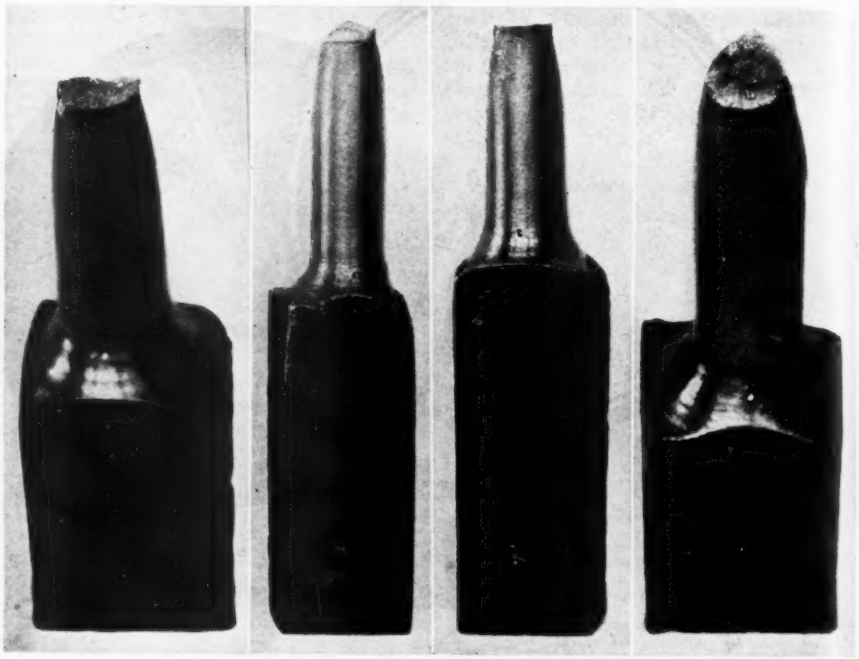
Carbon	0.20 to 0.30
Manganese	0.50 to 0.70
Phosphorus	Not over 0.04
Sulfur	Not over 0.04
Ultimate tensile	55,000 pounds
Elastic limit	27,500 pounds

Elongation in 8 inches 22 per cent for 3-inch plate.

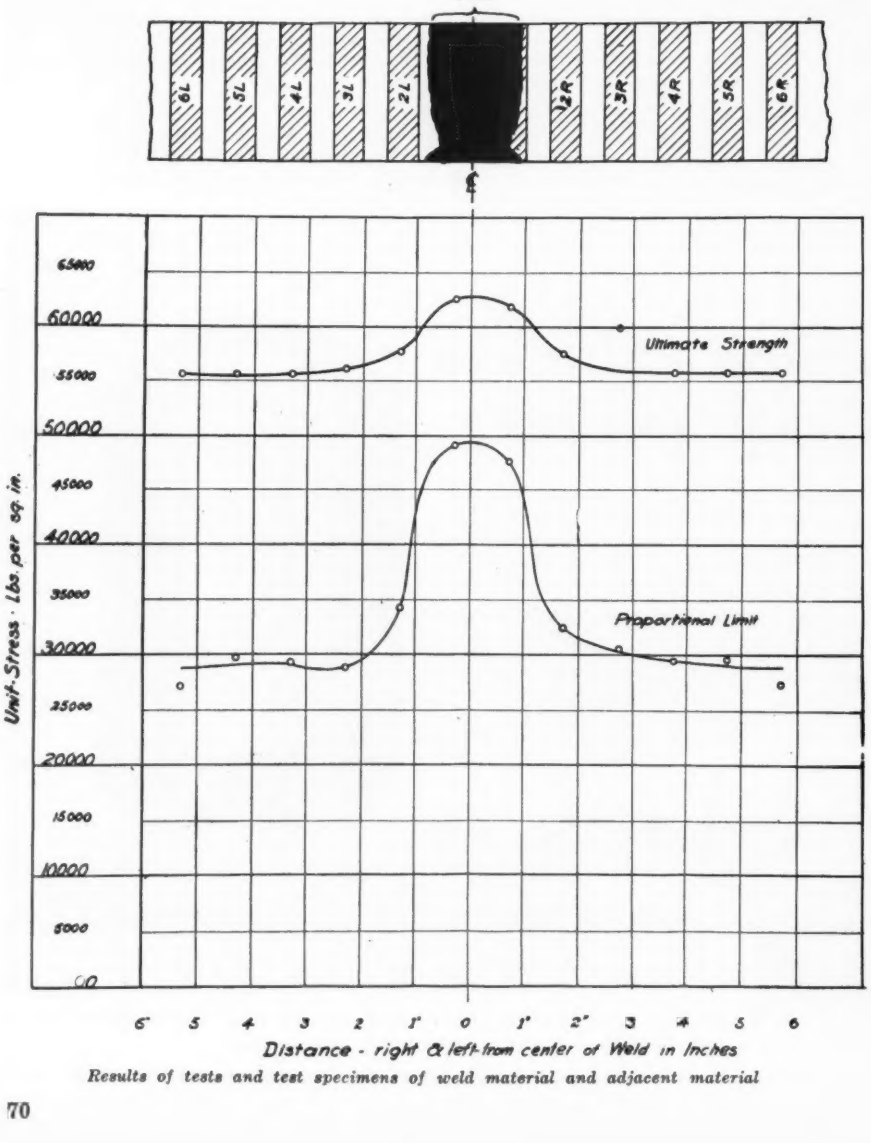
The characteristics of the weld are as follows:

Test bars cut across the weld and machined so that the weld has an equal section with the plate break in the plate. If the weld is reduced in section over 20 per cent of the plate, fracture will take place in the weld. The photographs reproduced show the tension test across the weld.

In the photograph of 5 Bars shown on Page 68, the reduction in area



Longitudinally cut test bars, respectively all weld, one-half weld and one-half stock, all stock adjacent to weld and all stock distant from weld



Results of tests and test specimens of weld material and adjacent material

was made by drilling holes through the weld. In all cases except where 7 holes were made through the weld, the fracture occurred in the plate and developed an ultimate tensile strength of 55,730 pounds per square inch.

WITH three holes through the weld, there was a reduction of area of 10.5 per cent. With five holes, the reduction area was 17.4 per cent and with seven holes, 24.3 per cent.

The weld using the reduced section in determining the stress per square inch, developed 72,100 pounds per square inch, that is the joint made by this type of weld would have a joint efficiency of 129 per cent.

Test bars cut longitudinally with the weld so that one bar is all weld, one bar, one-half weld and one-half stock, one all stock adjacent to weld, and all others in the stock result in curves as indicated in the chart showing an increase in strength adjacent to and in the weld.

Test bars machined out of all weld result in the following test figures. Ultimate tensile 66,000 pounds, Elastic limit 50,000 pounds, Elongation 27 per cent and Reduction of area 53 per cent. Fractures show a well defined cup, fine grain and the test bar itself a steel of uniform dense structure.

In design the equalization of stress can be easily attained. The elliptical head in which the major axis is twice the minor axis accomplishes this equalization and has been the standard with A. O. Smith Corp. for over a year. Stress measurements on the

shell indicated the necessity of reinforcement of all openings and these reinforcements can be easily applied with very excellent effectiveness.

Of prime importance in the manufacturing of stills is the inspection and testing of the steel plate. A minimum ingot cropping of 50 per cent is specified. This severe cropping results in comparatively small plates, however, as there is no objection to one or more welds the determination of the size of the plates has been fixed by the requirements of cropping and testing to insure sound and uniform steel in the plates.

All vessels are given an anneal at 1150 degrees to relieve all stresses that are set up by various steps in the manufacture. The plates are rolled hot. For heating plates for rolling as well as for annealing, multi-unit electric furnaces are available in which the temperature can be controlled to within 10 degrees at 1150 degrees Fahr. to 1550 degrees Fahr. at any point in the furnace.

All vessels are tested to the same stress per square inch i.e., 18,950 pounds per square inch in girth stress in the cylinder irrespective of the working pressure or customer's test specifications.

The various details which are assembled by welding into a still are carefully machined so that when put together uniform and accurate welding grooves result. On the care taken in machining the details depends the dimensional accuracy of the finished structure. The variations are well within the customer's specified tolerances.

Robert M. Hutchison, 1523 Highland Blvd., San Antonio, Tex., has developed a rapid calculator for the flow of oil and gas in pipe lines which will calculate gas flows for high and low pressure gas. The device is accurate to within .1 pound for high pressure gas and .01 inches of water for low pressure gas, Mr. Hutchison claims. It is equipped with gravity scale, sliding section, and a table of pressures with each corresponding absolute pressure squared accompanies the calculator for use in high pressure gas problems.

Another advantage is that no calculation for location of decimal point is necessary.

United Cork Companies, Lyndhurst, N. J., has off the press an insulation handbook, entitled "Facts and Figures on Insulation" which has been prepared for the purpose of supplying the refrigerating industry particularly with dependable data about pure corkboard and the modern methods of its erection. The information is based upon actual experiences gathered during the 20 years the company has been in business.

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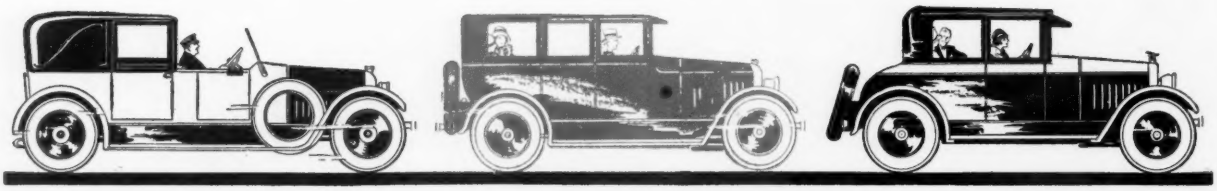
PROBLEMS FACING THE INDEPENDENT FILLING STATION — No. 5

Approximately 1 in every 3 is an out-of-town car!



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Two filling stations are on the same street. Both are good looking. Both have good locations.

But one station gets far more tourist trade than the other.

Does this just happen? No. There are good reasons for it.

In our study of successful filling station management we have discovered a number of facts on this phase of your business. Our Filling Station Specialist has this information. He will gladly talk it over with you.

What will you get out of such a talk? We make no rash promises. But we do believe that you will find the time well spent. Other operators tell us they have received many practical ideas. And remember that our Filling Station Specialist is prepared to talk with you about many of your sales problems.

A card to our nearest office or a word to the regular Mobiloil salesman will bring him.

All tourists can't know you — but —

They do know Gargoyle Mobiloil. Mobiloil advertising covers the entire country. In every state in the Union Mobiloil is the oil most asked for by name.

The tourist finds one additional reason for sticking to Mobiloil. He can buy it everywhere. He is assured of the same high-quality oil. And as a rule he buys his gas where he stops for oil.

To make worth while profits you must know the answers to these questions

1. How can you meet today's competition?
2. How can you cut down the number of slack hours?
3. How can you better please your customers?
4. What makes customers come back?
5. What makes transients stop?
6. What makes woman drivers buy?
7. What makes the farmer buy?
8. How can you compete successfully with big refiners?
9. Which brings most profits—"private" brands, "public" brands, or both?
10. How can you make larger sales to each motorist?
11. How should you locate new stations?
12. What type of station should you erect?

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VACUUM OIL COMPANY MAIN BRANCHES: *New York, Chicago, Philadelphia, Boston, Buffalo, Detroit, Pittsburgh, Minneapolis, St. Louis, Kansas City, Dallas*

Other branches and distributing warehouses throughout the country

Special riveted construction with double butt strap joint where outside butt strap is of saw tooth construction and all rivets are in double shear

Riveted Vessels for High Temperature, High Pressure Cracking Service

By S. Thurstensen*

THE continually increasing demand for higher pressures and temperatures in oil refining has brought about considerable change in the construction of cracking still reaction chambers and soaking drums.

A few years ago the requirements for these drums were about 100 pounds pressure and perhaps 600 degrees Fahr. temperature. For such conditions, ordinary riveted work or hammer welding, with medium thickness of plates, answered the purpose. However, with a demand for 300 pounds (and higher) pressure and operating temperatures of 800 to 1000 degrees Fahr., it became necessary to adopt heavy plate thicknesses to take care of not only the high pressure but also the greater corrosion and erosion which takes place at these higher temperatures.

In planning to meet this demand properly our foremost thought was safety of construction. To weld plates 2 inches to 3½ inches thick, we decided was impractical and too unreliable on account of the human element that enters so largely into that method of construction. We decided, therefore, that only two methods were entirely reliable: riveted seams and solid forgings.

However, as the last named method is very costly we concluded that properly designed riveted shells should meet our customers' best interests. They have also the advantage of sectional construction, which in case of large drums which cannot be shipped as single units, can be fabricated in several sections and assembled in the field. A further advantage is that if a defect should develop in a section of a drum, a new section could be fabricated to replace same, thus restoring the drum to operating condition at reasonable cost.

THE riveting of the sections in the field would, of course, be limited to plate thicknesses requiring rivets below 2 inches in diameter. Larger rivets would be impractical to drive with present obtainable field equipment.

To assemble the sections in the field, the outer sections should be heated and shrunk on the inner sections to make a good fitting job.

Up to about one year ago the largest rivet made was 1¾ inches in diameter, and the heaviest hydraulic riveter for driving these rivets was of 200 tons capacity. This allowed fairly good joint proportions for plates up to 2 inches in thickness, but for 2½ to 3½-inch plates and for good joint design, larger rivets were necessary, together with heavier pressure to drive them properly.

We therefore had a special hydraulic riveter built, of 275 tons capacity, said to be the largest riveter in the world. This machine can properly drive rivets up to 2½ inches in diameter.

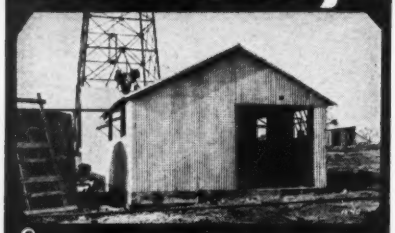
In order to get the best and most efficient longitudinal joint, it became necessary to depart from the usual quadruple riveted, double butt strap joint, as used in boiler construction. When heavy plates are used eccentric stresses cannot be avoided in the outer rows where the rivets are in single shear; we therefore adopted a double butt strap joint where the outside butt strap is of saw-tooth construction and ALL the rivets are in double shear.

WITH this construction we can design joints over 90 per cent of the strength of the shell plates. There is no uncertainty about this strength as there might be in a welded joint, as we know the shearing and crushing strength of the metal at the rivet holes and also the strength of the rivets in double shear.

Rolling of the heavy steel plates used in this construction is quite

*Chief Engineer, Henry Vogt Machine Co.

Sectional STEEL Buildings



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We save architects' fees, trouble of getting bids, contractors' profit, and cost of all special work.

Long life is insured by the materials—heavy galvanized steel sheeting, attached to structural steel frames with rust-proof aluminum rivets. All sizes. Write for details.

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BRADEN BUILDINGS

a problem. Cold rolling is desirable to secure uniform sizes of the several rings, but cold rolling of flange or firebox steel should be limited to plates not over 1¾ inches thick, especially on drums below 72 inches in diameter, because on smaller diameters the hard carbon steel frequently develops small cracks which are sure to give trouble later either in finishing the manufacture or in operation.

Special still bottom steel, or copper bearing steel, low in carbon, can be rolled cold satisfactorily up to 2½ inches in thickness and 72-inch diameter drums. Heavier plates than 2½ inches in thickness should be rolled hot.

One of the most important points in connection with furnishing satisfactory drums for refinery use is the careful selection of material best suitable for the purpose in its construction. Steel made under inspection at the mill should be specified, and we believe the low carbon special steel, although lower in tensile strength, is preferable in most cases, as a drum made of heavier low tensile strength plate would probably stand up longer under the corrosive action than a drum made of lighter, high tensile strength steel.

The workmanship on this class of work must be the very best. All edges of plates are planed; all longitudinal joint holes are drilled; girth joints are shrunk together; rivet holes drilled after the girth joints are shrunk in place, insuring absolutely fair holes. Double or triple rows of rivets are used in the girth joint, proportioned so as to make girth joints equal to or more than half the strength of longitudinal joints. All rivet holes are countersunk on inside of drum to a depth equal to 30 per cent of the diameter of hole. This insures a swell neck under the rivet head and a much tighter rivet.

All joints are electrically welded instead of calked, which makes a much better job. Only expert welders and the best welding wire is used for this work.

Factors Affecting the Safety of Cracking Vessels

By D. E. Sullivan*

THE most important factor in connection with the design of a pressure vessel for operation under high temperature is the strength of the metal used at the operating temperature. Ordinary plate or forging steel which has a tensile strength of 50,000 to 60,000 pounds per square inch at ordinary temperatures, will have at 900 degrees Fahr., which comes within the temperature range of the average liquid or semi-liquid phase cracking process, a tensile strength of less than 20,000 pounds per square inch.

The yield point of the metal, which would be at ordinary temperatures, around 30,000 pounds per square inch, would be less than 10,000 pounds per square inch at the higher temperatures. Relatively speaking, very little is known at this time about the physical properties of even ordinary metals at high temperatures. Methods of measurement of these properties have not been standardized.

Many of the failures of cracking pressure vessels which have occurred in recent years undoubtedly were caused by lack of knowledge of the physical properties at the operating temperatures and lack of proper precautions. Corrosion in many cases has caused wall thickness to decrease below the point of safety and bring about disaster. In most cases this corrosion has occurred without knowledge of the operator and undoubtedly many serious explosions that have been attributed to some mysterious cause would prove, if properly investigated, to have been due to corrosion decreasing wall thickness to the point where the pressure in the vessel exceeded the elastic limit of the metal.

Intelligent and safe operation of plants using pressure vessels which operate in the higher temperature ranges demands constant vigilance by technically trained and experienced men. There are at least three possible sources of serious trouble in high temperature and pressure cracking equipment. These are:

Corrosion.
Erosion.
Physical changes in structure of the steel.

Corrosion can be determined in two ways, one by drilling holes through the metal and measuring the thickness. The other by submitting the vessel to a hydrostatic test, cold, that is commensurate so far as the elastic limit of the metal is concerned, with the operating pressure and tem-

*Chief engineer, Pure Oil Co.

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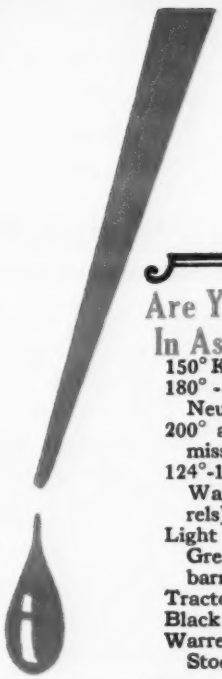
Very Highly Refined!

Stoll Kentucky Neutrals are refined from genuine, premium paraffine base crude. Filtered through Fuller's Earth! Wax pressed out! Stand Herschel Demulsibility Test! Have beautiful, clear color. Some of the finest motor oils made are compounded from Stoll Neutrals! Let us send you full specifications, quotations and freight rates—tank cars, assorted cars, l.c.l.! *Get the coupon off today.*



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150° Kentucky Neutral ☐ 180° - 200° Kentucky Neutral ☐ 200° and 300° Transmission Oil ☐ 124° - 126° Crude Scale Wax ☐
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Puts the Grease Business on a Profit Basis

STOP talking about there being no money in grease. There isn't, when you sell a man a pound at a time, adding new grease to old. It does the car no good, nor you.

But with a Warren Electric Grease Extractor you will triple your grease sales. With it one man can take old grease out of the case at the rate of two pounds per minute, and do it so easily that he likes the job. All new grease for the car means new profit in grease for you.

Write Today for our Special Free Offer to Oil Companies, Filling Stations and Garages.

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4 times a day

WHEN they're rushing to work in the morning; hustling through their short lunch period at noontime; hurrying homeward when work is done; and at evening when their thoughts are turned to pleasure and recreation. At least four times a day your station is taxed to its capacity to give quick service.

No need to delay them. Quick service can be one of your business-pulling magnets.

Rhodes Oil Dispensers enable you to give snappy service. Pre-filled, pre-measured and displayed near your gas pumps, everything handy, so you can empty oil into the crankcase quickly.

Equip your station today with these time-saving dispensers and boost your oil profits.

JAY B. RHODES COMPANY
Kalamazoo, Michigan

RHODES *PRE-FILLED OIL DISPENSERS*

Rhodes Dispensers are speedy pouring, transparent and accurate. They will help you increase your oil sales.

perature to which the vessel is subjected in operation.

Corrosion may attack the vessel at any point. However, it usually is most severe at or immediately above the liquid level. Pipes and fittings are also attacked severely. The corrosive agent in cracking equipment is usually sulfur in some of its numerous compounds.

Much work has been done and many papers have been written on combating this corrosion by the introduction of some neutralizing agent into the oil entering the pressure vessel. However, most of the best results have been obtained by installing liners in the pressure vessels which can be renewed as soon as they have become corroded to a serious extent. Also various other methods such as calorizing, chromium plating and spraying of molten metals which will resist corrosion on the steel, have been used.

For every corrosion problem an alloy of some character has been proposed which will resist the chemical action but no single alloy has been developed which will withstand all the corrosive conditions met with in various cracking operations. Most of these alloys are so expensive that their use cannot be made to pay a profit.

Erosion usually occurs in the pipe, valves and fittings subjected to rather high velocities and most erosion problems are accompanied by corrosion.

Physical changes in the steel are manifold under various operating conditions. Steel is peculiar in that due to fatigue, crystallization, temper and other characteristics, structural changes within the metal often occur when they are least expected.

Stedt's brittleness has been known to give a great deal of trouble in steels operating under conditions of alternate heating and cooling, with the accompanying strain on the metal. Test bars should be taken from the metal in the vessels whenever any of these conditions is suspected and tested to make sure of their presence or absence.

Not So Dumb

Among the conservation measures of the World War was a gasless Sunday, when citizens exhibited their patriotism by leaving their automobiles in the garage and hitching up Dobbin. In one Southern camp orders were issued that gasoline-driven vehicles would not be allowed inside the gates.

A couple of women drove up in an electric auto, and were promptly and importantly stopped by an M.P., who told them it was gasless Sunday.

"But," the lady driver remonstrated, "this car doesn't use gas—it's an electric."

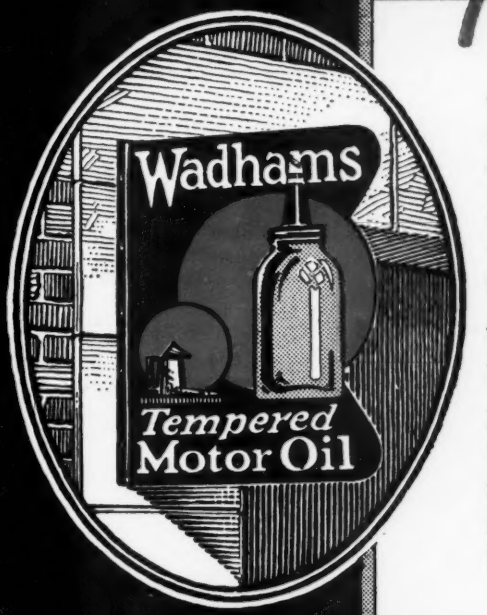
"Aw, you can't fool me, lady," retorted the M.P. with gusto. "Where's your trolley?"

—Independent Topics.

Wadhams *of* Wisconsin

not only "has something" but *does* something!

for instance



—Wadhams has a special eye open for the jobber or retailer who is "oil ambitious" — who realizes that oil business can be *built up* instead of waiting for mere natural demand.

Wadhams turns loose a special battery of co-operative effort on your prospects—works with you to make Tempered Oil Sales a main profit source instead of a side issue. Wadhams Tempered is the oil line that you can *talk!*

A PROPOSITION of profit and importance awaits the Dealer (*any size*) and Distributor (*any size*) who is tired of the handicaps—and suspicions—of selling oil which has nothing to say for itself except that "it's oil."

Wadhams Oil Company
Milwaukee, Wis.

Established 1879

Sign and mail this Coupon

WADHAMS OIL COMPANY, *Milwaukee, Wis.*

Gentlemen: Without obligating or committing ourselves we are willing to find out what you propose toward more profitable Oil Selling.

(*Firm Signature*).....

by.....
(*Street Address*)..... (Position with Firm)
City..... *State*.....

Greatest Early Gusher and Name Fertig—They Were Inseparable

IN ANY gathering of oil men who followed the varying fortunes of the industry in the early days, the name of Fertig is potent. Three brothers, John, Samuel and Peter—they were a trio known wherever men drilled for oil.

Now, in his 89th year, Samuel lives in retirement in Titusville, Pa., that little city which is home to so many of the industry's elders. The celebrated Noble well, of 1863, was drilled by him and stands as his first—and greatest—exploit.

The International Petroleum Exposition, in its search for the oldest oil man, brought from the pen of John Edwin Murray, of Titusville, a sketch of the career of Samuel Fertig. It is published herewith. About the same time and for the same purpose, Mrs. Clare Stahl, of Independence, Kans., wrote a short letter telling of the career of her father, Peter Fertig, now of Monrovia, Calif. Of him, it is said that he drilled the first commercial oil well west of the Mississippi river. It was near Paola, Kans., on the Russell farm and was completed in 1886.

Peter Fertig was born on March 1, 1841, and is a few days short of being two years younger than Samuel. Both were born on a farm near Fertig's Post Office, Venango county, Pa. Peter helped in the drilling of the Noble well, Samuel being a partner in the enterprise. Peter served three years in the Civil war and after he returned home he again entered the oil business, in Pennsylvania.

He drilled for Guffey & Galey after coming to Kansas and later for the Prairie Oil & Gas Co. He retired in 1908 but the Fertig name goes marching on. His son John is vice-president and general manager of the Producers & Refiners Corp., and lives in Denver.

The sketch of the career of Samuel Fertig, by John Edwin Murray, is as follows:

Samuel S. Fertig was born March 8, 1839, and spent his boyhood days on his father's farm at Fertig's Post Office, Pine Grove township, Venango county, Pennsylvania. He attended the district school at that point and later attended the Neilsburg academy. He assisted his father with the farm work until he reached the age of 18. He then taught the district school for a period.

In the fall of 1860 he contracted to drill several oil wells, on the Clapp Farm, located north of Oil City, Pa., the work being completed early in 1861. This contract marked his entry into the oil business and

SAMUEL FERTIG

the success of the venture, together with the increasing excitement along Oil Creek prompted him to continue this line of work.

For nearly four years following the discovery of the Drake well, the majority of the oil wells drilled along Oil Creek were shallow wells, ranging from 69 feet, the depth of the Drake well, to approximately 400 feet.

IN 1863 a group of men living in a nearby town made up a pool of $500 each for the drilling of a test well between Titusville and Oil City to a depth of 500 feet. A contract was let and the well, located on the John Farrel farm had been drilled to a depth of over 100 feet when an eminent geologist made an exhaustive report, giving elaborate scientific data to prove that crude petroleum could not be found at a greater depth than 500 feet. As a consequence of the geologist's report some of the parties who started the well decided to abandon the venture. Accordingly, Messrs. Lamb, Nason and Churchell, on behalf of the owners, entered into an arrangement whereby Noble & Delamater took over the control of the unfinished well and the 10-acre piece of the John Farrel farm on which the well was located, in March, 1863. This firm entered into a verbal agreement with Samuel S. Fertig of Titusville to drill the well 500 feet deeper, unless oil was found at a less depth, for which they were to pay $2 per foot from the bottom of the hole already drilled; Mr. Fertig to bear ⅛ of the expense of such drilling himself, the balance to be paid him by Noble and Delamater. Upon completion of the contract Mr. Fertig was to receive 1/16 of the oil, etc., obtained and saved from the lease-hold; this being ⅛ of the Noble & Delamater half-interest in the whole lease.

SAM FERTIG drilled the hole to a depth of less than 500 feet and struck a very rich sand which satisfied him that he had a gusher. He felt uneasy about the verbal agreement and to safeguard his interest he rode up to Delamater's store and requested that papers be made out to guarantee his interest in conformance with the preliminary covenants. After a parley over the matter he obtained the papers and returned to the well. Two days later, on the afternoon of May 27, 1863, the well was brought in, the gas roared, the ground was shaken by the pressure and an immense column of oil and water enveloped trees and derrick in a dense spray. Workmen hastened to extinguish the fire beneath the boiler. The Noble well, the most profitable ever known from a three-inch casing, had begun its career at 3000 barrels a day.

Crude was $4 a barrel, rose to $6, to $10, $13. Compute the receipts at these quotations— $12,000— $18,000— $30,000—$39,000. Sinbad's fabled Valley of Diamonds was a 10-cent side show compared with the stubborn facts of the Valley of Oil Creek.

Soon the foaming volume filled the hollow close to the well and ran into the creek. For $200, three men crawled through the blinding shower and contrived to attach a stop-cock to the pipe. By sunset a 700 barrel tank was overflowing. Boatmen down the creek notified to come at once for all they wanted at $2 a barrel, by midnight took the oil directly from the well. Next morning the stream was turned into a 3,000-barrel tank, filling it in 21 hours. Sixty-two thousand barrels were shipped and 15,000 tanked, exclusive of leakage and waste, in 30 days. Week after week the flow continued, declining to 600 barrels in 18 months.

R. W. Carroll, more than a decade ago in referring to the Noble well states its finish as follows:

"After the 'United States Well' had become pretty well exhausted in yield and was putting out only a few barrels per day, the survey for the projected Allegheny Valley railroad, to run from Corry, Pa., connecting there with the Atlantic & Great Western, afterwards the Erie railroad,

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A marvel of simplicity. Will work surely, instantaneously and infallibly. May be run in the hole as rapidly as desired without setting, thereby reducing off-production time to a minimum. When used in connection with our special anchoring attachment, as many of these devices as desired may be placed on the string with full assurance that all of them can be set simultaneously.
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CLEARVISION

Dominant in Service

There is Only One CLEAR VISION PUMP

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Manufacturing and stocking a complete line of Clear Vision equipment—easily accessible to the West Coast trade.

SEND FOR CATALOG

showed that the projectors would either be obliged to run a very expensive tunnel through a large hill or buy the United States well and construct the railroad over it. They bought the well for $60,000—and that was the finish in the history of the first great "oil gusher" which has indeed made a most phenomenal record, costing as it did, less than $6 000 and netting the owners over $3,200,000. It is altogether probable that this is the greatest return ever obtained from a 3-inch hole in the ground."

The spectacular demonstration made by the Noble well confirmed the contention that this lower sand, found to average 40 feet in thickness along Bull Run, would prove more prolific than the upper formations. And the fallacy of the geologist's claim that 500 feet was the maximum depth at which crude oil could be found, was later forcibly impressed.

THE drilling of the Noble well opened a new epoch in the production of crude oil, thus adding untold wealth to the industry. This venture in the early days is the outstanding feature of the activities of Samuel S. Fertig, covering a career in the production of oil of approximately 67 years.

J. D. Henry, in his "History and Romance of the Petroleum Industry" published in 1914, places the production at 1,500.000 barrels and the net proceeds at $5,000,000. It is apparent that these items are both excessive. A conservative view favors 800,000 barrels production and the proceeds at approximately $4,000,000—based on the later, the daily production would average about 1463 barrels for eighteen months.

The one-sixteenth interest assigned to Samuel S. Fertig, in conformance with the written agreement, together with an additional sixteenth which he purchased from John Farrel while drilling the well, were both sold shortly after the strike, netting him approximately $60,000. This sum provided the means for his entry into the business on an extensive scale.

Mr. Fertig acquired interests of his own in the adjacent territory and continued his activities, following the excitement from pool to pool, being actively engaged in the development of Pithole, Shamburg, Turkey City, St. Petersburg, Clarion county, Warren, Cherry Grove, Bradford, Ridgway, Olean pools, and in the important pools of Ohio, Indiana, West Virginia, Kentucky, Oklahoma and Texas. In 1906, entering the Illinois field, he made a spectacular success. Later ventures in this field and investments in other lines proving unprofitable, he returned to Titusville some ten years ago. In 1923, Mr. Fertig drilled several wells on the Hammell farm in Vanango county, Penna, and has since retired from active work in the oil fields.

A short time since, the writer called at his home where Mr. Fertig, at the age of 89 years, appeared as a man of 70, planning operations, and keeping in touch with the business, with intensive interest, in spite of his ripe old age.

His original entry into the business 67 years ago, his continuous activity in the production of crude oil for a period exceeding sixty-three years, during which he was in the front line of prospectors in the opening and development of most of the important oil pools within the boundaries of the United States, not as an office man, but in the field, should emblazon the name of Samuel S. Fertig in an outstanding position on the honor roll among the "Oldest Living Oil Men" surviving in this, the year 1927.

His genial personality, free hearted liberality and sterling worth have greatly added to the universal popularity of Samuel S. Fertig among the oil well workers. In the language of R. W. Carroll "Of all the grand Old Oil Boys that ever threw his legs over a Kentucky thoroughbred or danced a drill or turned a temper screw, there is none more genial, more widely known or more popular than Samuel S. Fertig of Titusville, Pa."

Auto Industry Prepares For 1928 Market

NEW YORK, Nov. 18.—*Automotive Industries* this week said:

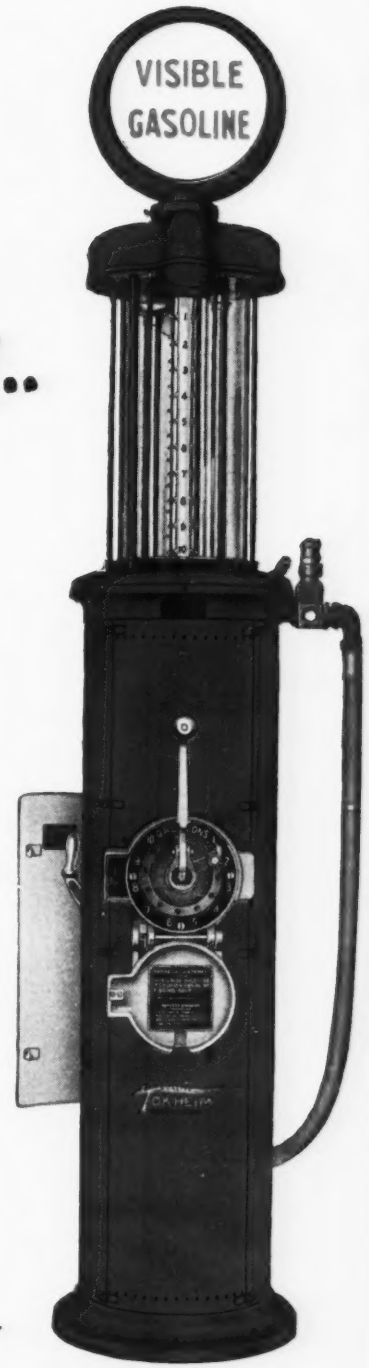
Automobile manufacturing activity is currently mainly concerned with preparations for the 1928 market. With sales slack just now there is plenty of opportunity at the plants for revamping of assembly lines, installation of new equipment, taking of inventory and laying of merchandising campaigns which will be launched at about the time of the national automobile shows.

There is a very general belief that 1928 will be a big year for the industry, based on the conviction that the announcement of the new Ford will release a buying demand long held back. By the same token, however, there is no disposition to believe that sales will be easier to gain next year than they have in 1927 and a period of even stiffer competition is anticipated. Numerous overt moves to meet the Ford challenge are being rumored but confirmation is lacking.

With virtually everything known about the new Ford so far as general mechanical specifications are concerned, executives in other companies have been given a good deal of time to lay their plans for next year.

Meanwhile at the River Rouge plants further testing and minor changes in the Ford are deferring the day of large scale production. Fabrication and assembly of parts has been speeded up, but so far as is known only test cars have come off the final assembly lines.

Another year is close at hand..



YOU are probably wondering what the business prospects are for 1928.

Remember that "business is as good as you make it."

Without trying to get into the prophet class, we are willing to predict that there will be plenty of business in 1928 for marketers and station owners who are in position to deliver the kind of service that motorists want.

Now is the time to "get set" with your 1928 plans. Let Tokheim help you. Tokheim Cut 600-605 visible gasoline pumps will aid you in providing a real super-service for your patrons—and protect your profits at the same time.

The Master Control Meter insures accurate measure—speed—correct account at the pump—and a total record of your sales, to 1,000,000 gallons and repeat. It is a Master pump throughout.

Address Department "M" for full details. Now is the time to do it.

THE TOKHEIM OIL TANK & PUMP COMPANY
FORT WAYNE, INDIANA

TOKHEIM
Master Control
VISIBLE GASOLINE PUMPS

Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

IT MATTERS not how much one earns, he is worth exactly what he will have saved when his earning power has ceased, in the opinion of Courtenay Marshall, secretary and assistant treasurer of the Magnolia Petroleum Co., Dallas. According to Mr. Marshall, he knows a man who never in his life made more than $140 a month, yet he laid by enough to own five 5-room houses which bring in more than any month's earnings he ever had; and because this man saved his money he could stop working tomorrow and live on a larger income from his property than his abilities had ever been able to earn.

Mr. Marshall's remarks were made in the interest of the Magnolia's building and loan facilities, but they are applicable outside the company as well as inside it. The point is made that such facilities offer a splendid opening to thoughtful employees either to own their own homes or save their money as a protection against insecurity.

* * *

OTTO D. DONNELL, president of the Ohio Oil Co., with Findlay headquarters, has returned home after an inspection trip on which he visited properties in the southwest.

* * *

E. G. WOODRUFF of Tulsa, who in recent years has practiced as a consulting geologist in the Mid-Continent and other fields, is now on a trip to South America. In his days of company service, Mr. Woodruff was identified at various times with The Texas Co., the Oklahoma Producing & Refining Corp., and the New England Oil & Pipeline Co.

* * *

CHARLES LAURENCE BAKER, who heads the geological department of the Rio Bravo Oil Co., Southern Pacific subsidiary, recently discussed the problem of Mississippi river control before the Houston Geological Society. His discussion dealt largely with delta problems and erosional conditions.

* * *

H. K. V. TOMPKINS, general agent of the Mexican Gulf Oil Co., is back in Tampico after a business trip that took him to Houston, Pittsburgh, New York and Niagara Falls. Mrs. Tompkins will return to Tampico about Christmas.

GEORGE SAWTELLE

PHOTOGRAPHS like statistics are supposed never to lie, but liars do use statistics. The obvious parallel is not to be drawn arbitrarily, however, after looking at the accompanying snapshot of George Sawtelle, vice president and general manager of the Kirby Petroleum Co., taken on a recent Gulf coastal fishing trip. The picture actually is truthful, it merely requires explanation.

Sawtelle's right hand, his friends say, holds the fruit of his individual prowess; the big string of fish in his left hand represents the combined catch of the entire party. Other pictures bottled up by the censor of the piscatorial war department tend to prove the contention of Sawtelle's friends. At least, the same big string was photographed several times in other hands.

Although Sawtelle's headquarters are officially at Houston, he spends most of his time at San Angelo. He is one operating executive who believes in conducting the company's affairs on the ground and not from the home office.

BERNARD MINER of the engineering department of the Gulf Production Co. has been transferred to Fort Worth division headquarters from Wichita Falls, where he had been chief of the district staff.

* * *

B. E. PARRISH, resident manager at Limon camp for the Marland interests in Mexico, has returned to the Tampico district after a trip to Ponca City, Okla.

* * *

A. W. TIEDEMANN of the Royal Dutch-Shell group of oil companies now writes his address as in care of the Sarawak Oilfields, Ltd., Miri, Sarawak, British Borneo. He was transferred to Borneo from Tampico, Mexico.

* * *

FRED P. SHAYES, geologist of the Houston Oil Co. of Texas, has been transferred to company headquarters at Houston from Beeville, Texas. A. S. Henly, chief geologist, is on a six months leave of absence.

* * *

IT'S just impossible to get ahead of the Mellon interests of Pittsburgh, who control the Gulf Oil Corp. and the Aluminum Co. of America, together with their various subsidiaries. The latest demand for aluminum products comes from west Texas, where wood roofs are necessary on steel storage tanks housing high sulfur content crude oil. The corrosive action of sulfur in the oil is such that aluminum nails are used in the roofing operation.

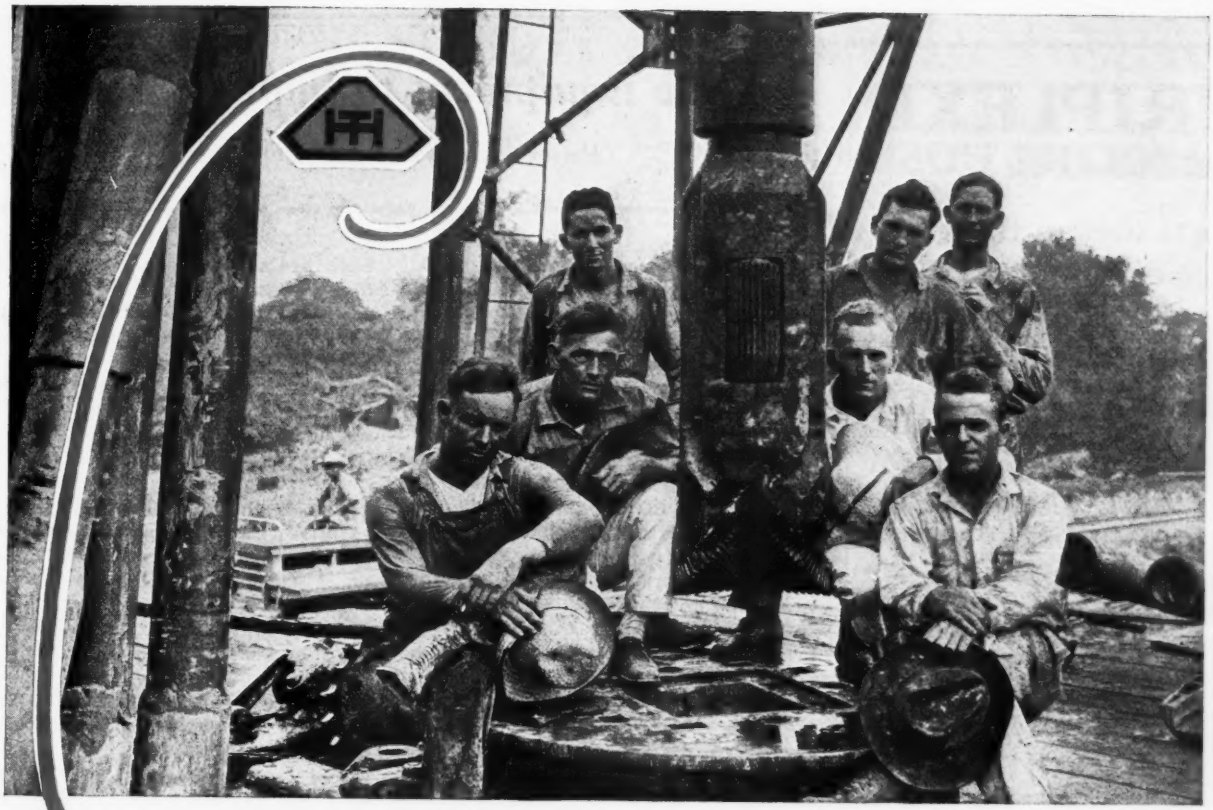
Most of the important bauxite deposits in the United States and South America are controlled by the Aluminum Co. of America. Bauxite is the raw material from which aluminum is manufactured.

* * *

THE cables bring news of two fatalities in the world quest for oil. A dispatch from Bagdad, Iraq, says Arthur Symmons and B. Bollinger, American drillers, were fatally gassed when a well of the Turkish Petroleum Co., near Kirkuk, Mesopotamia, ran wild late in October.

* * *

O. O. OWENS of Tulsa, who drilled the discovery gas well of northwestern Val Verde county, Texas, several months ago, has sold a one-half interest in his Mills ranch leaseholds to the Atlantic Oil Producing Co., for a reported consideration of $400,000. Owens reserved the full interest in the discovery 80-acres and four adjoining 80s.



A 16" HUGHES ROCK BIT

Ready to go in the hole on Filisola No. 64 of Compania Mex. de Pet. "El Agulia" Francita District Vera Cruz, Mexico.

One of the many foreign companies standardizing on HUGHES ROCK BITS & HUGHES TOOL JOINTS.

"Hughes Tools Sold By Supply Stores Everywhere"

Photograph Shows:
E. A. Godfrey—Drilling Supt.
N. S. Starr—Tool Pusher
Bob Holden—Driller and Crew

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OKLAHOMA CITY, OKLA.

MAIN OFFICE AND PLANT
HOUSTON, TEXAS

Export Office
NEW YORK CITY, N.Y.

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All sizes and lengths of Triplexd Hose are carried in stock in these cities:

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ATLANTA: P. O. Box 1343
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BOSTON: 142 Berkeley St.
PITTSBURGH: 341 Second Avenue
CLEVELAND: 1302 Ontario Street, North
CINCINNATI: 450 East Pearl Street
DETROIT: 5459 Grand River Avenue
ST. LOUIS: 1621 Pine Street
KANSAS CITY: 13th Street and Eastern Ave.
CHICAGO: 1213 W. Washington Blvd.
SAN ANTONIO: 1401 South Flores Street
HOUSTON: 700 N. San Jacinto Street
EL PASO: 1020 East Overland Street
NEW ORLEANS: 211 South Peters Street
MINNEAPOLIS: 900 Sixth Ave., S. E.
DENVER: 4800 York Street
SAN FRANCISCO: 873 Mills Building
LOS ANGELES: 1625 South Hill Street
SEATTLE: 67 Columbia St.
OMAHA: 13th & Willis Sts.
TORONTO, CAN.: Dunlop Tire & Rubber Goods Company, Limited
LONDON, ENG.: J. Bazley-White, 3 Love Lane, Eastcheap, E. C. 3

METAL HOSE & TUBING CO. INCORPORATED 236 Tillary Street BROOKLYN, N.Y.

New Equipment to Improve Plants

Personal Notes of the Manufacturers

National Petroleum News

Service Station Equipment Co., Bryan, O., has announced a line of Eco medium heavy duty air compressors particularly designed for handling the many duties of the modern super-service stations.

These compressors are ruggedly built to handle increased service. In addition to inflating of tires, these air compressors will operate gasoline dispensers, car lifts, paint spray guns, valve grinders and cleaning and greasing equipment.

The company has also developed two new automatic inflators. Model No. 28 inflator will convert any air tower to give automatic service and model No. 25 is adapted for wall or post installations in tire shops or garages where limited space prevents the use of a larger unit. This inflator has been re-designed to include an automatic cut-off hose hook and a centrifugal air cleaner.

* * *

Mack Trucks Inc., 252 West 64th street, New York, is carrying on a campaign to promote road courtesy. They are distributing gratis to anybody who asks, small blue and white stickers for wind shields which read "This driver will meet all other gentlemen half way on any traffic situation." The signs can be read easily from one machine to another in street traffic. The demand for the small gummed wind-shield decorations is almost startling, company officials say.

* * *

The Threaded Products Co. of Berkeley, Cal., announces that the Thermo Engineering Co., 317 New Alexander Building, Tulsa, Okla., has been selected as the company's representative in the Mid-Continent. William G. Corey of Los Angeles, is handling the Threaded Products line in southern California.

* * *

Badger Meter Mfg. Co., Milwaukee, Wis., with its specialty meter division at 30 Church St., New York City, has off the press a bulletin devoted to its line of meters for various industrial uses including hot water and oil meters.

The meters are simple in operation and have generous waterways. The working parts are of bronze excepting the disc which varies with the liquid to be measured. A special feature of construction is that the chamber is below the main housing joint, which permits of large inlet and outlet ports in measuring chamber and consequent larger capacity than other meters without causing back pressure, the bulletin says. The dial housing is fitted with a port for ventilation and drainage. The antifog top in three sections is easy to clean.

Sizes, capacities and prices are included for each type adapted to various industries.

* * *

The Wayne Co., Fort Wayne, Ind., gasoline pump manufacturers, effective Nov. 1 announced these additions to its executive staff, due to increased business:

A. D. Carriger, for the past year sales manager of the pump and tank division and previous to that in charge of the company's Chicago office, vice president in charge of sales; and

W. F. Brandt, for several years general superintendent, vice president in charge of development and production.

* * *

Worthington Pump & Machinery Corp., will exhibit at the New York power show in December, its multi-stage centrifugal pumps for pipe line and booster service and its three-stage special oil line pump.

The new high-pressure, multi-stage centrifugal pump for boiler feeding and similar high pressure jobs will be demonstrated with the upper case removed, showing the construction of the volute diffuser. This pump is hydraulically balanced and has single suction impellers.

A feature of the oil line pump is the U-shape series pipes connecting the stages. The pumps are placed two in series, directly in the line, which gives smooth flow and decreased strain on the pipe line. Lower initial cost and the self-regulating feature against increased pressure in cold weather, are claimed by the company as this pump's outstanding characteristics.

* * *

C. J. Tagliabue Mfg. Co., Brooklyn, N. Y., has placed on the market a Tag steam operated controller which it claims will maintain the desired temperature or pressure in a piece of equipment. It utilizes steam power on a piston or diaphragm to operate a steam valve. The device is an improvement over the old self-operating type of control, and also over the accurate and quick-responding air-operated type which, however, requires a constant supply of clean and dry compressed air.

To Consider Standard For Cleaners Naphtha

CLEVELAND, Nov. 18.—Invitation has gone out to refiners, dry-cleaners and others interested to attend a conference called by the commercial standards unit of the Bureau of Standards to be held in room 704 of the Commerce building, 19th and Pennsylvania av., Washington, D. C., at 10 a.m., Dec. 2, to consider establishment of standard specifications for dry-cleaners naphtha or Stoddard Solvent. Stoddard Solvent is the name given by the dry-cleaners to a naphtha which suited their requirements. See page 102, May 5, 1926 issue.

The specifications which it is proposed to make a so-called commercial standard follow:

I. Material

Stoddard solvent shall be a petroleum distillate conforming to the detailed requirements given herein.

II. Detailed Requirements

1. **Appearance.**—Shall be clear and free from suspended matter and undissolved water.

2. **Color.**—Shall be water-white.

3. **Odor.**—Shall be sweet.

4. **Flash Point.**—Shall be not lower than 100° F. ("Tag" closed tester).

5. **Corrosion Test.**—A clean copper strip shall not show more than extremely slight discoloration when submerged in the solvent for 3 hours at 212° F.

6. **Distillation Range.**—The initial boiling point shall be not lower than 300° F. (Initial boiling point is the thermometer reading when the first drop falls from the end of the condenser). Not less than 50 per cent shall be recovered in the receiver when the thermometer reads 350° F. The dry or end point shall be not higher than 410 °F.

7. **Acidity.**—The residue remaining in the flash after the distillation is completed shall not show an acid reaction.

8. **Doctor Test.**—Shall be negative.

9. **Unsaturation Test.**—Not more than 2 per cent of the solvent shall be soluble in concentrated "c.p." sulfuric acid (sp. gr. 1.84).

The methods given for testing are from the standards of the American Society for Testing Materials and from Federal Specifications Board specifications Nos. 2d and 7 (Bureau of Mines Technical Papers 323A and 323B and Bureau of Standards Circular No. 86).

Crouse-Hinds Co., Syracuse, N. Y. has off the press a black and gold bulletin illustrating the many purposes for which floodlight projectors are used. Various types and sizes are shown.

Drill Deeper For Sales

WHEN it's a question of production you drill deeper and deeper—bringing in a new well or putting new life in old one.

Sales respond to the same treatment. Drill deeper into your prospects' consciousness with samples. A well conceived sampling campaign has often put an astonishing ascent into a sales curve.

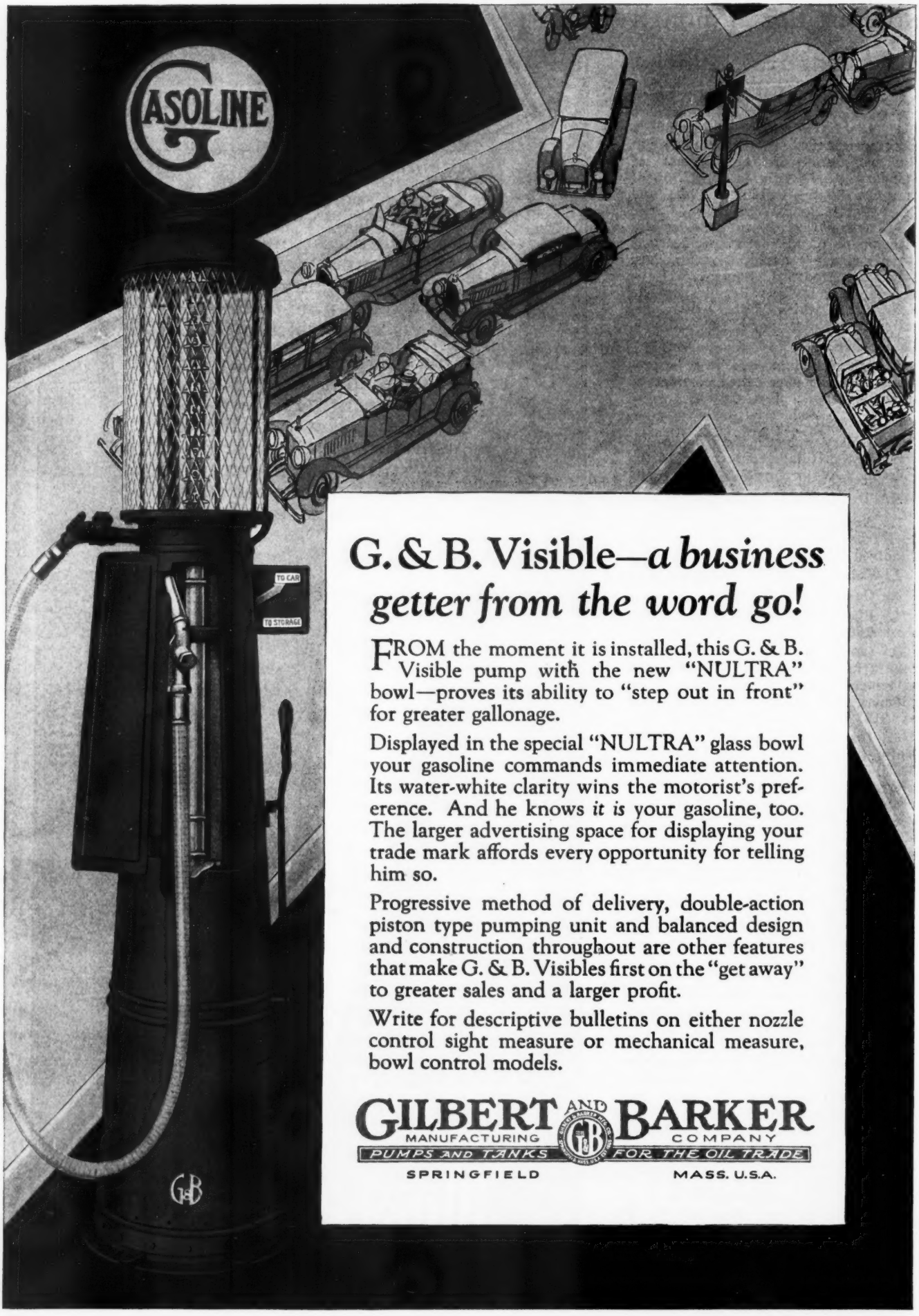
Our sample oil bottles meet every mailing and packing requirement. For years they have been a standard in the oil industry. Clear, brilliant and sturdy—with ground or polished bottoms they dress your product to its best advantage.

Sample on request

Illinois Glass Co.

ESTABLISHED 1873

Alton Ill.



G. & B. Visible—*a business getter from the word go!*

FROM the moment it is installed, this G. & B. Visible pump with the new "NULTRA" bowl—proves its ability to "step out in front" for greater gallonage.

Displayed in the special "NULTRA" glass bowl your gasoline commands immediate attention. Its water-white clarity wins the motorist's preference. And he knows *it is* your gasoline, too. The larger advertising space for displaying your trade mark affords every opportunity for telling him so.

Progressive method of delivery, double-action piston type pumping unit and balanced design and construction throughout are other features that make G. & B. Visibles first on the "get away" to greater sales and a larger profit.

Write for descriptive bulletins on either nozzle control sight measure or mechanical measure, bowl control models.

GILBERT AND BARKER
MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD MASS. U.S.A.

New Patents

Nov. 8

REFINING

Recovery of Gasoline—Eugene C. Herthel and Thomas de Colon Tifft, Chicago, Ill., assignors to Sinclair Oil & Gas Co., Tulsa, Okla. Filed July 5, 1924. No. 1,648,585.

PRODUCTION

Control Casing Head—Merton T. Archer, Pittsburgh, Pa., assignor to The National Supply Co., Toledo, Ohio. Filed Feb. 1, 1927. No. 1,648,039.

Deep-Well Emergency Valve.—Kenneth M. Brogdon and Christopher L. Hoswer, Smackover, Ark. Filed March 25, 1926. No. 1,648,107.

Oil-Well Stimulator—Dalton U. Powell, Woodsfield, Ohio, assignor to Samuel K. Frank, Wheeling, W. Va. Filed Feb. 25, 1926. No. 1,648,242.

Well Derrick—Samuel Otis Hale, Whittier, Calif. Filed Jan. 9, 1925. No. 1,648,268.

Control-Head Packer—Erd V. Crowell, Los Angeles, Calif., assignor to The Gulberson Corp., Dallas, Tex. Filed Oct. 25, 1924. No. 1,648,377.

Pump—John H. Hill, Houston, Tex. Filed Jan. 29, 1927. No. 1,648,400.

Reciprocating Pump for Use in Deep Wells—Kasaburo Onishi, Tokyo-Fu, Japan. Filed Nov. 10, 1925. Renewed Sept. 15, 1927. No. 1,648,620.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

28054—**Candles**, Tunis, Tunisia, agency.

28071.—**Match wax**, Bombay, India, purchase.

28087.—**Gasoline**, Tallinn, Estonia, agency.

28116.—**Lubricating oils and greases**, Buenos Aires, Argentina, purchase.

28138.—**Motor, steam cylinder and fuel oils**, Milan, Italy, purchase and agency.

28145.—**Lubricating oils and greases**, Halle, Germany, agency.

Foster Wheeler Corp., 165 Broadway, New York City, has off the press its first bulletins since its formation through the consolidation of the Power Specialty Co. and the Wheeler Condenser & Engineering Co. a few months ago. These are bulletins EC-102, 119 and 120. Bulletin 102 describes the Foster economizer, including test data, photographs, drawings and a steam table up to 1500 pound gage pressure and 300 F. superheat. Bulletin 120 is devoted to the new extraction type feed water heater for turbo electric power stations. No. 119 deals with hot water heating systems of the forced circulation type using exhaust steam from the power plant as the source of heat.

Quality

REFINING SCIENCE MODERNIZED

SHARPLES PROCESS OILS

Gravity	28½-29	29-29½
Flash	440	430
Viscosity	75 @ 210 650 @ 100	60 @ 210 385 @ 100
Color	6 plus	5¾
Pour	25/30	25/30

Guaranteed 100% PURE PENNSYLVANIA OIL

FRANKLIN CREEK REFINING CORP.
Franklin, Pa. Permit 34

For Samples and Quotations

W. H. DAUGHERTY & SON REFINING CO.
Permit 30 Petrolia, Pa.

SALES OFFICES, 114 FIFTH AVE., NEW YORK

KANOTEX

DO YOU KNOW

—that Kanotex Petroleum Products, through sheer merit alone, have acquired an enviable reputation everywhere they are known

—that the name of Kanotex has grown to stand for all that is best in the industry

—that Kanotex jobbers and dealers are constantly making more money; building up more good will, and keeping their customers better satisfied, than any competitor?

Kanotex Petroleum Products are much easier to sell—than to sell *against*.

Think it over—then send us your order for a trial car; that's the best way to prove the truth of Kanotex superior Quality.

THE KANOTEX REFINING COMPANY

Phone L. D. No. 4

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Accurate—Compact—Convenient

The experience of 39 years has made the form of the Allison Coupon Book simple, practical and dependable. Progressive, wide-awake filling stations are exclusive users. Every book guaranteed to be absolutely accurate. Furnished in stock or special designs. *Send for samples and prices.*

Allison Coupon Company

Indianapolis, Indiana

Coupon Book Specialists Since 1888

New Stations Building

Elmore, O.—Laurie Dolps will build filling station.

St. Paul, Minn.—Steve Dow seeks permit for filling station.

Stanley, N. D.—White Eagle Oil Refining Co. is completing bulk station.

Brainerd, Minn.—Walter P. Tyrholm Co. will build bulk station.

Minneapolis, Minn.—H. G. Molden, 3600 Cedar Ave., seeks permit for filling station.

Mobridge, S. D.—Standard Oil Co. of Indiana will build bulk station.

Allen, Neb.—H. Buckley will build filling station.

Cresco, Ia.—Iowa Oil Co. will build bulk station.

Corning, Ia.—John Anderson will build filling station. Peoples Oil Co. will also build filling station here.

High Point, N. C.—Mrs. J. G. Lambert seeks permit for filling station.

Durham, N. C.—Sinclair Refining Co. is completing filling station.

Indianapolis, Ind.—Standard Oil Co. of Indiana and E. J. Rinehart each will build filling station.

Leipsic, O.—C. J. Ericson will build filling station.

Port Clinton, O.—Harry Stensen will erect filling station.

Medina, O.—Medina Oil Co. is completing bulk station.

Kaufman, Tex.—Bob Jordan and Lee Mangham will erect filling station.

Bismarck, N. D.—The Texas Co. will build filling station.

Waterloo, Ia.—Herman W. Wante seeks permit for filling station.

Winston-Salem, N. C.—Red Star Filling Stations, Inc., will operate or build filling stations here.

Reading, Pa.—Maloney Oil Co., Scranton, Pa., will build filling station.

Durham, N. C.—Standard Oil Co. (New Jersey) sold five filling station sites to Standard Oil Co. of New Jersey here.

Attleboro, Mass.—Arthur E. Grant seeks permit for filling station.

Baltimore, Md.—American Oil Co. will build filling station.

Geneva, O.—J. T. Hull will build filling station.

Caney, Kan.—Phillips Petroleum Co. will build $10,000 filling station.

Paden, Okla.—E. D. Thomas is completing filling station.

Raymondville, Tex.—Joe Turner is building filling station and garage.

Mena, Ark.—Joe Harris is re-building filling station destroyed by fire.

Dickinson, N. D.—The Texas Co. will build filling station.

Minneapolis, Minn.—F. B. Kremer seeks permit for filling station.

Rock Lake, N. D.—Rolla Oil Co. will erect filling station.

Alpena, S. D.—Charles F. Fowler is completing filling station.

ON THE LAZY BENCH

National Petroleum News

Sevan Tells Perrie

Dear Perrie:

I got your letter what say come over, Sevan, and lets go into oil business. What you mean go into oil business. Two cajans like us, how foolish you talk. I been working at these goshding refineries at Baytown and you know two fellows like us could not get money enough to buy the stink, much less all the other contraptions what you got to have to refine this oil; where you going to get them stills, them pipes, them mans and them payrolls, what all them want and got to get each payday. My friend, if I had all that money what you need to build refinery, I would not want the goshdinged oil. I would go back down on Bayou Salle and make me swinging hammock under them live oak trees and hire cajan girls to keep flies away and bring me black coffee and Perique cigaros and die happy.

You know this oil is some full of mystery like Mr. Ford's new fliver, the more you see and hear the less you find out. Big fellow he come along with some sticks, some strings and some wire and set up some machines, then he explodes enough dynamite to rattle all the windows and rot all the eggs in two parishes and go away and say nothing.

Little fellow he comes along and tell all the farmers there is oil under their land, gets a five year lease, goes out and sells stock and breaks all the stenogs and bookkeepers.

When you go out to look for it you can't find it, when you got your Sunday clothes on you can't keep out of it. It produces the money for the old lady to have her hair bobbed, and her face lifted; it is a born democrat and don't care with who it associates. You can see that by reading in the paper whats going on at Washington. No, Perrie, no oil business for me. A Cajan must keep away from temptation.

Sevan

(From a Texas Reader)

* * *

Speaking of the penalty for keeping bad company, consider what a wild duck gets for associating with a decoy.

* * *

She wrote to a poultry journal that poultry raising was much to her liking, and wondered how long the hen should remain on the eggs. The editor wrote:

"Three weeks for chickens and four weeks for ducks."

Later she wrote to the poultry journal as follows:

"Many thanks for your advice about the setting hen. She remained on the nest three weeks, and at the end of that time there were no chickens hatched. As I did not care for ducks, I took her off the nest and sold the eggs."

—*Magnola Oil News*

* * *

It Reminded Him

A negro parson held forth as follows: "Brudders and sistahs, I want to warn you against de henious crime ob stealin' chickens, and fuddermo' I wants to warn you against the heinous crime of stealin' watermelons."

At this point an old negro rose up and snapped his fingers and sat down again.

"Wharfo,' brudder, does you rise up and snap yo' fingers when I speak ob watermelon stealin'?"

"Yo' jes' reminds me, parson, where I left ma knife," was the reply.

—*Independent Topics.*

* * *

Natural History Lesson No. 23

The Calf

Consider the Calf. The Calf is essentially childish.

And very easily cowed by his mother.

Mr. Ziegfield always sees to it that Calves have a fair show.

Low-minded persons refer to a Calf's siesta as Veal Loaf.—(Don't shoot.)—*Isotopics.*

* * *

"Was she shy when you asked her her age?"

"Yes, I imagine about ten years."
—*Barnsdall.*

* * *

Minister—"I hear, Paddie, they've gone dry in the village where your brother lives."

Paddie: "Dry, Mon! They're parched. I've just had a letter from Mike, an' the postage stamp was stuck on with a pin.—*Barnsdall.*

* * *

Sales Resistance

"Here, boy," growled a tightfisted buyer of a newspaper, "what's this you were yelling about 'Great Swindle —Sixty Victims?' I see nothing in the paper about it."

"Great Swindle!" shouted the youth, even more loudly. "Sixty-one Victims!"

—*Independent Topics.*

Reinforced Folio

362—A very compact folio, having three pockets. Made from the best grade smooth black cowhide. Stiffened bottom reinforced with metal studs. Case contains six 4-oz. bottles and five grease jars. Two inner cases may be carried.

Less 10% for Cash

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware, KANSAS CITY, MO.

Get a Binder

for

National Petroleum News

YOU can get one specially made to hold 26 issues of National Petroleum News—made of imitation leather and inexpensive.

It enables you to keep the weekly issues of National Petroleum News in good order and easily accessible.

Send check or money order for $2 and your N. P. N. binder will go to you promptly.

NATIONAL PETROLEUM NEWS

1213 West 3rd St.

Cleveland, Ohio

Name.....

Address.....

This SIGN invites the careful motorist into your station!

THE meaning of this sign is becoming more and more widely known to alert and careful motorists. When they see it on your station they *know* that you are a Dealer who not merely sells oil, but *gives correct lubrication.*

The Dealer who shows this Sign asks the man who drives in for oil—*"What is the mileage on your speedometer?"* Then he consults the Sinclair Recommendation Index and gives the motorist exactly the right grade of Opaline to fit the degree of wear in the car's engine and *seal* its power!

May we tell you about this successful method of selling *correct lubrication* with the full line of Opaline Motor Oils?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

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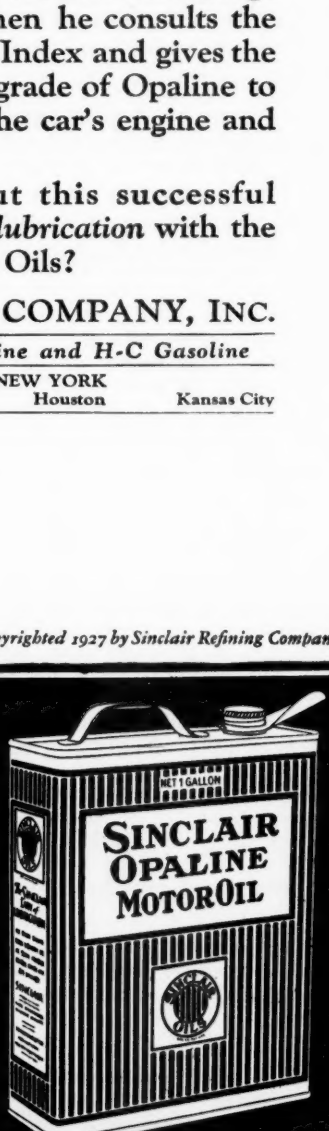
Authorized Dealer

SINCLAIR OPALINE MOTOR OIL

REG. U. S. PAT. OFF.



Seals Power at every Degree of Wear

Refinery - Tank Wagon Markets

National Petroleum News

Mid-Continent Burner Oil Instructions Increase With Colder Weather

Staff Special
TULSA, Nov. 19

MID-CONTINENT gasolines experienced a comparatively steady demand this week, with shipping instructions for burning oils increasing as the colder weather set in over most of the territory's marketing area.

Prices on all major refined products were generally unchanged over those prevailing a week ago. Low gravity gasolines, naphthas and the low gravity fuel oils were the only ones to suffer any price recessions.

Two export purchases of gasolines were made early in the week in north Texas. One company bought 700,000 gallons of 64-66, 375 E.P. gasoline at 6.75 cents a gallon, and another company bought 300,000 gallons of 60-62, 400 e.p. gasoline at 6.50 cents. The 375 end point goods were bought to fill out a cargo which is to be lifted at the Gulf within the next few days.

These two purchases, coupled with those made last week in the same district, have put the north Texas refiners in excellent shape on gasolines until around the twenty-fifth of the month, the salesmanager for one large refinery in that district said Friday. A comparatively small amount of 58-60 U. S. Motor is being made in the district at present, and the demand within the state is taking care of virtually the entire output.

Oklahoma refiners' prices have been steady on gasolines for the past several weeks, but many of them this week said they had encountered considerable competition at lower prices from other areas, especially in Illinois.

Buyers in some districts have reported quotations which would give a netback around 5.75 cents a gallon on 58-60 U. S. Motor, Group 3 freight basis. These quotations apparently were not general but were being made to destination points where advantageous freight rates from point of origin prevailed.

Oklahoma refiners' price on 58-60 U. S. Motor has been 6 cents bottom for some time past. The only sales reported under that figure are odd cars usually in transit and looking for a home. The price range has been from 6 to 6.25 cents. As is to be expected at this season of the year, refiners making 450 e.p. gasolines and naphthas have had to reduce their prices slightly in order to move their goods.

Louisiana and Arkansas refiners continued to be in good shape on gasolines. One large refiner in Louisiana has had such a good station and contract business that he has had only one to two cars a day of 58-60 U. S. Motor to sell on the spot market. Another refiner in that district has had his operations down to where he has had to buy on the outside to supply his demand. He said this week he probably would buy between 25 and 50 cars of gasoline this month. A third refiner, while making a considerable amount of gasoline, has been getting good prices in his differential territory, and moving his surplus to northern points at prices the same as and in a few instances slightly higher than Oklahoma prices.

IN Arkansas the Lion Oil Refining Corp. is still running under capacity as a result of an accident at their plant several weeks ago, but indications were today the repairs probably would be completed by Dec. 1. This company has been able to keep its production moving in excellent shape. The Root Refineries, Inc., as a result of an explosion recently, has been forced to buy some gasolines from other refiners in that district. The other refiners' operations are down to the extent that no stocks have been accumulating.

While refiners in all districts have made some high gravity gasolines for their trade, the bulk of this grade of goods is being produced in north Texas and Oklahoma.

Oklahoma refiners report a noticeable increase in orders for 60-62, 400 e.p. and 64-66, 375 e.p. gasolines this week, at the expense of U. S. Motor. The demand has not been sufficient as yet, however, to make any changes in prices.

Natural gasolines skidded in price this week. Demand was at low ebb. Prices at the close of business today were from a quarter to a half a cent under those at the same time a week ago. The cooler weather has curtailed the production of both Grade A and Grade AA. These two products have been the last to feel the price decline. Grade A is comparatively scarce at present and manufacturers in some instances are getting slightly more for the product than they get for their Grade AA. Another factor which has given some support to the Grade AA has been the contracts for export.

GRADES BB and C have developed considerable weakness with the weather causing an increase in production just at a time when orders were scarce. Considerable distress goods have been offered this week.

Kerosene inquiries in Oklahoma were better late in the week, although no export buying had been reported. Prices were around 4.50 to 4.625 cents a gallon for 41-43 water white treated kerosene. Odd cars of untreated goods were moved at 4.375 cents, but the bulk of these sales were to resale agents.

A majority of the trade in Texas reports kerosene scarce in that district, although one large refiner this week caused a little excitement by offering a quantity of goods approximately an eighth of a cent under the prevailing market. Two or three other large refiners have bought some goods to apply on their own orders. One large company at New Orleans has been exporting kerosene and buying from Texas and Louisiana refiners to supply the stations in its territory.

Low cold test distillates and gas oil have been in better demand. Prices have shown no changes. One Louisiana refiner early in the week sold a quantity of zero straw gas oil for export. Refiners in that district report inquiries are good on their gas oils at prices slightly above

JENKINS CRACKING PROCESS

PRODUCES QUALITY GASOLINE

Facts from performance

Consider

the importance of the flexibility of the Jenkins Cracking Process which, without extra auxiliary equipment, permits the economic and profitable production of gasoline from—

Crude Oil

Topped Crude

Gas Oil

Residium

GRAVER Corporation *Founded 1857*

EAST CHICAGO, INDIANA

NEW YORK Grand Cent. Term. | CHICAGO America Fore Bldg. | TULSA Atlas Life Bldg. | HOUSTON West Building

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

	Prices Nov. 21	Prices Nov. 14	Prices Nov. 7
PENNSYLVANIA			
52-54 Naphtha	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
54-56 Naphtha	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
58-60 Gasoline	8.00 – 8.25	7.875– 8.25	8.00 – 8.25
60-62 Str.-run gasoline	8.50 – 9.00	8.50 – 9.00	8.75 – 9.00
64-66 Str.-run gasoline	9.25 – 9.75	9.25 – 9.50	9.25 – 9.75
68-70 Str.-run gas. 350-360 e.p.	10.00 –10.25	10.00 –10.25	10.00 –10.25
OKLAHOMA			
48-50 450 e.p. naphtha	5.625– 5.875	5.75 – 6.00	5.75 – 6.00
50-52 450 e.p. naphtha	5.625– 5.875	5.75 – 6.00	5.75 – 6.00
56-58 450 e.p. gasoline	6.00	6.00	6.00
58-60 450 e.p. gasoline	6.00	6.00	6.00
56-58 U. S. Motor, 437 e.p.	**6.00 – 6.125	**6.00 – 6.125	**6.00 – 6.125
58-60 U. S. Motor, 437 e.p.	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
60-62 437 e.p. gasoline	**6.125– 6.375	**6.125– 6.375	**6.125– 6.375
60-62 400 e.p. gasoline	**6.375– 6.625	**6.50 – 6.75	**6.50 – 6.75
64-66 390 e.p. gasoline	**6.75	**6.75	**6.75
64-66 375 e.p. gasoline	**7.00 – 7.125	**7.00 – 7.125	**7.00 – 7.125
68-70 350-360 e.p. gasoline	7.00 – 7.25	7.125– 7.375	7.125– 7.375
KANSAS (F. O. B. refinery Kansas destination)			
58-60 U. S. Motor 437 e.p.	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
60-62 400 e.p. gasoline	6.75 – 7.00	7.00 – 7.125	7.00 – 7.125
64-66 375 e.p. gasoline	7.375– 7.50	7.50	7.50
NORTH TEXAS			
48-52 450 e.p. naphtha	†6.00	†6.00	†6.00
56-58 450 e.p. gasoline	5.875	5.875	5.875
58-60 450 e.p. gasoline	5.875	5.875	5.875
58-60 U. S. Motor 437 e.p.	6.00 – 6.125	6.00 – 6.125	6.00
60-62 400 e.p. gasoline	6.375	6.375	6.375
64-66 390 e.p. gasoline	6.625	6.625	6.50
64-66 375 e.p. gasoline	6.75 – 6.875	6.75 – 6.875	6.75 – 6.875
68-70 350-360 e.p. gasoline	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125
NORTH LOUISIANA (For Louisiana and differential territory destination)			
58-60 U. S. Motor gasoline	6.50	6.50	6.50
ARKANSAS (For Arkansas intrastate shipment)			
56-58 450 e.p. gasoline	6.25	6.25	6.25
58-60 450 e.p. gasoline	6.25	6.25	6.25
58-60 U. S. Motor 437 e.p.	6.375– 6.50	6.50 – 6.75	6.50 – 6.75
ARKANSAS (F. O. B. Arkansas refineries for interstate shipment)			
58-60 U. S. Motor 437 e.p.	**6.375	**6.375– 6.625	**6.375– 6.625
CALIFORNIA			
*54-58 U.S. Motor 437 e.p.	7.00 – 8.50	7.00 – 7.50	7.00 – 7.50
*58-61 U.S. Motor 437 e.p.	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50
*42-45 Eng. dis. 445-480 e.p.	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00

*2c tax to be added if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375° F. Since Oct. 1, 1927 all naturals must pass corrosion test.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	5.50 – 5.625	5.625– 5.75	5.75 – 6.00
Grade A, 72-79.9, 90% Recovery	5.75 – 6.00	5.625– 5.75	5.75 – 6.00
Grade BB, 84-92, 85% Recovery	5.25	5.50 – 5.625	5.625
Grade B, 76-83.9, 85% Recovery	5.25	5.50 – 5.625	5.625
Grade C, 80-90, 78% Recovery	5.00 – 5.125	5.50 – 5.625	5.50 – 5.625
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	5.625	5.625– 5.875	5.75 – 6.00
Grade A, 72-79.9, 90% Recovery	5.875– 6.00	5.625– 5.875	5.75 – 6.00
Grade BB, 84-92, 85% Recovery	5.25	5.625	5.625– 5.75
Grade B, 76-83.9, 85% Recovery	5.25	5.625	5.625– 5.75
Grade C, 80-90, 78% Recovery	5.00 – 5.125	5.50 – 5.625	5.50 – 5.625
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†6.375– 6.50	†6.375– 6.50	†6.375– 6.50
Grade BB	†6.125	†6.125	†6.125
Grade C	†6.125	†6.125	†6.125
CALIFORNIA			
75-85, 375-390 e.p. blend.	9.50 –10.00	9.50 –10.00	9.50 –10.00

MOTOR FUEL BLENDS

PENNSYLVANIA			
68-70 Blend 437 e.p.	Prices	.....	.....
64-66 Blend 437 e.p.	temporarily	.....	.....
60-62 Blend 437 e.p.	discontinued	.....	.....
OKLAHOMA			
64-66 Blend 437 e.p.	6.00	6.00	6.00 – 6.125

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	6.50 – 6.75	6.50 – 6.75	6.50 – 6.875
46 w.w. kerosene	6.875– 7.25	6.875– 7.25	7.00 – 7.50
47 w.w. kerosene	7.25 – 7.50	7.25 – 7.50	7.25 – 7.75
OKLAHOMA			
41-43 w.w. kerosene	4.50 – 4.625	4.50 – 4.75	4.625– 4.75
42-44 w.w. kerosene	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	4.875– 5.25	4.875– 5.25	4.875– 5.25
42-44 w.w. kerosene	5.625– 5.75	5.625– 5.75	5.625– 5.75
NORTH TEXAS			
40-42 w.w. kerosene	†4.50	†4.50	†4.50
41-43 w.w kerosene	†4.625– 4.75	†4.75	†4.75
NORTH LOUISIANA (For Louisiana and differential territory destination)			
41-43 w.w. kerosene	5.00 – 5.25	5.00 – 5.25	5.00 – 5.125
ARKANSAS (For intrastate shipment only)			
42-44 kerosene	5.125– 5.25	5.00 – 5.125	5.00
ARKANSAS (F. O. B. Arkansas refineries for interstate shipment)			
42-44 kerosene	5.00	4.75 – 5.00	4.75 – 5.00
CALIFORNIA			
38-40 w.w. kerosene	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50

NEUTRAL OIL

Vis.	Color	Prices Nov. 21	Prices Nov. 14	Prices Nov. 7
PENNSYLVANIA		(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.		33.00 –34.00	33.00 –33.50	34.00 –34.50
180 No. 3 Assoc. Filt.		30.50 –31.00	31.00 –31.50	31.00 –32.00
150 No. 3 Assoc. Filt.		27.00 –28.00	26.50 –27.50	27.25 –28.00
		(Non Viscous)		
34 Grav. 330-340 Flash		7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
36 Min. Neut. 300-305 Flash		6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
**OKLAHOMA				
Vis.	Color	(Viscosity at 100°F.)		
100	No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150	No. 3	8.00 – 8.50	8.00 – 8.50	8.25 – 8.50
150	No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180	No. 3	9.00 –10.00	9.00 –10.00	9.50 –10.00
180	No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180	No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200	No. 3	9.50 –11.00	9.50 –11.00	9.50 –11.00
200	No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200	No. 5	8.50 –10.50	8.50 –10.50	8.50 –10.50
220	No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220	No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220	No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240	No. 3	14.00	14.00	14.00
240	No. 4	13.25 –13.50	13.25 –13.50	13.50
240	No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280	No. 3	15.50 –16.50	15.50 –16.50	16.00 –17.00
280	No. 4	15.25	15.25	15.25
280	No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300	No. 5-6	17.00	17.00	17.00
GULF COASTAL				
Vis.	Color	(Viscosity at 100° F., pour test 0)		
100	No. 2 Unfilt. Pale	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
200	No. 3 Unfilt. Pale	9.50 –10.00	9.50 –10.00	9.50 –10.00
300	No. 3 Unfilt. Pale	10.00 –11.00	10.00 –11.00	10.00 –11.00
500	No. 3½ Unfilt. Pale	12.00 –12.50	12.00 –12.50	12.00 –12.50
750	No. 4 Unfilt. Pale	14.50 –15.00	14.50 –15.00	14.50 –15.00
200	No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300	No. 5½ Red Oil	9.50 –10.00	9.50 –10.00	9.50 –10.00
500	No. 6 Red Oil	10.50 –11.00	10.50 –11.00	10.50 –11.00
750	No. 6 Red Oil	13.00 –13.50	13.00 –13.50	13.00 –13.50
CALIFORNIA				
Vis.	Color	(Viscosity at 100°F.)		
100	No. 2	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
100	No. 3	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
200	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
300	No. 3	10.50 –11.00	10.50 –11.00	10.50 –11.00
450	No. 3-3½	13.00 –13.50	13.00 –13.50	13.00 –13.50
550	No. 3-3½	14.50 –15.00	14.50 –15.00	14.50 –15.00
600	No. 3-3½	15.00 –15.50	15.00 –15.50	15.00 –15.50
100	No. 5	6.50	6.50	6.50
200	No. 5	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300	No. 5	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
400	No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
500	No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
600	No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
700	No. 7	14.00 –14.50	14.00 –14.50	14.00 –14.50

CYLINDER STOCKS

**OKLAHOMA			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	23.00 –26.00	23.00 –26.00	25.00 –27.00
600 E St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	9.00 –10.00	9.00 –10.00	9.00 –10.00
600 St. Ref. Dark Green	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	(1-inch Immersion Test)		
600 Steam Refined	9.75 –10.50	9.75 –10.50	9.75 –10.50
650 Steam Refined	12.00 –13.00	12.00 –13.00	12.00 –13.00
600 Flash	15.00 –16.50	15.00 –17.00	16.50 –17.50
625 Flash	27.00 –28.00	27.00 –28.00	27.00 –28.00
600 Warren E	17.00 –19.00	16.75 –17.50	17.50 –18.50
600 Oil City E	15.75 –16.50	15.50 –16.50	16.50 –17.00
600 D Filtered	24.50 –25.50	24.50 –25.50	24.50 –25.50
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210, 540-550 flash, No. 8 color	30.00 –31.00	30.00 –31.00	31.50 –32.00
40-50 p.p., 140-150 vis. at 210, 540-550 flash, No. 6-6½ color	28.00 –29.00	28.50 –29.00	30.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

CO-RE-CO

100% PURE PENNSYLVANIA OIL

PURE PENNSYLVANIA PETROLEUM PRODUCTS — CORECO TRADE MARK — ESTABLISHED 1885

CORECO CORECO CORECO

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices Nov. 21	Prices Nov. 14	Prices Nov. 7
*Per Pound, New York			
122-124 white crude scale	3.00 – 3.125	3.00 – 3.125	3.125– 3.25
124-126 white crude scale	3.125	3.125	3.25
OKLAHOMA			
**124-126 Semi-refined..	2.55 – 2.75	2.55 – 2.75	2.625– 2.875
CALIFORNIA			
White crude scale, per pound, ton lots.....	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil.....	4.50 – 4.75	4.625– 4.75	4.50 – 4.75
30-34 fuel oil.....	4.625– 4.75	4.625– 4.75	4.50 – 4.625
28-32 fuel oil.....	4.625– 4.75	4.625– 4.75	4.50 – 4.625
OKLAHOMA			
38-40 straw distillate.....	3.25 – 3.375	3.25 – 3.375	3.25
36-38 straw distillate.....	3.00	3.00	3.00
*32-36 gas oil, straw.....	†2.625	†2.625	†2.625
*32-36 dark gas oil.....	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
28-30 fuel oil (in bbls.)...	$0.925– 0.975	$0.925– 0.975	$0.925– 0.975
26-28 fuel oil (in bbls.)...	$0.875– 0.90	$0.875– 0.90	$0.875– 0.90
24-26 fuel oil (in bbls.)...	**$0.85	**$0.85	**$0.85
22-26 fuel oil (in bbls.)...	**$0.80– 0.825	**$0.80– 0.825	**$0.85
18-22 fuel oil (in bbls.)...	**$0.725	**$0.725– 0.75	**$0.75
16-18 fuel oil (in bbls.)...	**$0.70– 0.725	**$0.725	**$0.725– 0.75
14-16 fuel oil (in bbls.)...	**$0.70– 0.725	**$0.725	**$0.725– 0.75

*Zero cold test low flash goods sell for ½ to ¾ cent more per gallon.
Zero cold test fuel oils sell for 5 to 15 cents more per bbl.

KANSAS (F. O. B. refinery Kansas destination.)			
38-40 straw distillate.....	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
36-38 straw distillate.....	3.25	3.25	3.25
32-36 gas oil.....	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
24-26 fuel oil	*$0.90– 0.95	*$0.95	*$0.95
18-22 fuel oil.....	*$0.85	*$0.85 – 0.90	*$0.85– 0.90
NORTH TEXAS			
38-40 straw distillate.....	3.125– 3.25	3.00 – 3.125	3.00 – 3.125
32-36 gas oil, cracked....	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 gas oil, uncracked..	2.50	2 50	2.50
24-26 fuel oil (in bbls.)...	$0.80 – 0.825	$0.85	$0.85 – 0.875

GULF COASTAL	Prices Nov. 21	Prices Nov. 14	Prices Nov. 7
Fuel (in bbls.).....	$1.60 –$1.65	$1.60 –$1.65	$1.60 –$1.65
Gas oil.....	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
NORTH LOUISIANA (For Louisiana and differential territory destination)			
32-36 gas oil, dark.....	3.00 – 3.125	3.00 – 3.125	3.00
32-36 gas oil, straw.....	3.125– 3.25	3.00 – 3.125	3.00 – 3.25
16-20 fuel oil (in bbls.)...	$1.00 – 1.05	$1.00 – 1.05	$1.00 – 1.025
ARKANSAS (For Arkansas intrastate shipment only)			
32-36 gas oil.....	3.00	3.00 – 3.25	3.00 – 3.25
28-32 gas oil.....	2.75 – 3.00	2.875– 3.00	2.875– 3.00
Road oil.....	.....	.....	$1.25– 1.30
ARKANSAS (F. O. B. Arkansas refineries for interstate shipment)			
28-32 gas oil.....	2.75	2.75 – 2.875	2.75 – 2.875
Smackover crude fuel....	$0.975–$1.025	$1.10 – 1.15	$1.10 – 1.15
Road oil.....	.....	.....	$1.15 – 1.25
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)...	$0.65 –$0.75	$0.60 –$0.75	$0.60 –$0.75
14-18 Bunker oil (in bbls.)	$0.85 –$1.00	$0.85 –$1.00	$0.85 –$1.00
30-34 gas oil (in bbls.)...	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
27 Plus Diesel oil (in bbls.)	$0.85 –$1.00	$0.85 –$1.00	$0.85 –$1.00

PETROLATUMS

PENNSYLVANIA (In cents per pound in tank cars; in barrels, in car lots ¾c per pound more.)			
Snow White.....	9.25	9.25	9.25
Lily White.....	8.25	8.25	8.25
Cream White.....	7.25	7.25	7.25
Light Amber.....	5.50	5.50	5.50
Amber.....	4.50	4.50	4.50
Red.....	3.75	3.75	3.75
Green No. 5 color.....	3.50	3.50	3.50

**PETROLEUM COKE

(Per ton in car lots)

Lump.....	$5	$5	$5
Still run.....	$3	$3	$3
Breeze.....	$2	$2	$2

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those prevailing in Oklahoma and Texas.

Low gravity fuel oils have been hard to move the past 10 days or two weeks, a majority of refiners report. Instructions for 24-26, 26-28 and 28-30 gravity fuels have been more numerous. Refiners making zero cold test fuel oils have been getting from 5 to 15 cents a barrel premium.

Industrial buying of fuel oils in north Texas this month was not as well distributed as has been the case in the past. Prices have slipped somewhat with several sources offering goods. Two refiners in Louisiana have had considerable fuel to move, but one of them said this week that by Dec. 1 his stocks of fuel oil would have been materially reduced as a result of intensive sales effort recently.

Movement of neutral oils has been exceptionally good for this season of the year, Oklahoma refiners report. A considerable quantity of both neutral oils and bright stocks have been moving for export. One Oklahoma refiner has been shipping a good quantity of neutral oils for export, dealing direct with the purchaser.

Wax prices were unchanged this week. Orders were reported only fair.

Tank Truck Committee Meets in Chicago

Staff Special

CHICAGO, Nov. 17.—How tank trailers should be designed and built to safeguard them against accidents that might result in fire, was the topic that occupied the minds of about 40 men at Underwriters Laboratories for two days this week.

The occasion was a meeting on Nov. 14 and 15 of the conference committee on tank trucks of the Flammable Liquids committee of the National Fire Protection association. It was presided over by H. E. Newell, 85 John st., New York City.

Truck tanks and how they should be mounted on chassis was up for discussion for a short time on the first day of the meeting. The gathering was composed of truck manufacturers, tank builders, men whose companies perform both operations and turn out finished tank trucks, as well as tank truck operators. The last named class, for the most part, were men in charge of truck transportation for major oil companies and came from widely separated sections.

The conference was only a discussion, and resulted in bringing up a few new questions. The membership disagreed as to their importance. No changes were made in the tentative specifications for tank trucks; no detail specifications were brought in and no data or accident reports brought up that might lead to changes in the tentative specifications as they stand now.

In discussing the matter of tank trailers, the question of whip in a long train of trailers was considered, also the matter of brakes for trailers, and couplings that would be sufficiently elastic and at the same time afford adequate control from the driver's seat. As far as the truck tank and its supporting chassis are concerned, the opinion prevailed at the meeting that rules governing tank trucks were applicable in every way to trailer construction and use.

W. P. R. A. Directors To Meet

Staff Special

TULSA, Nov. 21.—Directors of the Western Petroleum Refiners Association will meet at the organization's headquarters in the Cosden building on Dec. 5, according to announcement by Howard Bennette, managing director, to select a place for the next annual meeting and decide on dates. The association usually meets early in March.

Weather Brings Heavy Demand For Chicago Burner Oils

Staff Special
CHICAGO, Nov. 19

BURNER oils were in heavy demand in Chicago market this week. The first heavy snow of the year stimulated the call for these commodities. Several sellers reported being unable to fill all their orders. The majority of orders were for immediate shipment. Considerable amount of goods was bought for over the balance of November.

Demand for gasoline this week was about on a par with that of last week. Jobbers continued their hand-to-mouth buying policy. Most orders were for small lots, rush shipment. Reports from nearly all quarters told of good business this week as gasoline consumption throughout the territory was still fairly heavy.

Sales of 58-60 U. S. Motor continued in same price range as for past four or five weeks. Bulk of goods moved from 6 to 6.125 cents. Several sellers were doing business at 6.25 cents. On the other hand some sales were recorded as low as 5.75 cents.

Fairly good movement was reported on higher gravity gasolines. Several sellers reported increased demand during the closing days along with the drop in temperature. Better demand was noted for these grades than for U. S. Motor gasoline.

Prices on the high test were unchanged. Most 60-62, 437 e.p. moved at 6.25 to 6.375 cents. The 60-62, 400 e.p. moved mainly at 6.50 to 6.625 cents. The 64-66, 375 e.p. continued to sell at 7 to 7.125 cents, several sales were reported at 6.875 cents.

Kerosene was unchanged both in price and demand this week. Demand for 41-43 w.w. was quiet; prices were 4.50 to 4.625 cents.

Although the gas oils with a zero cold test were moving well the ordinary grade of 32-36 was quiet. Bulk of ordinary goods moved at 2.50 cents with considerable amount going at 2.625 cents. The 32-36 dark zero gas oil was sold mostly at 2.75 cents with some sales reported at 2.875 cents. Straw gas oil with a zero cold test was scarce. Most of this goods is coming from Louisiana and only one or two refiners there are making it, is is reported. Sales of this commodity ranged from 3 to 3.125 cents with sellers getting 3.25 cents in some cases.

Improved demand for distillate was reported this week. Practically all of the trade reported that inquiries were coming in better than for some time past. Prices of the 38-40 straw were firm with the majority sales from 3.25 to 3.375 cents.

Fuel oil with a low cold test has been in good demand, especially the higher gravities. Prices were generally unchanged, except higher cold tests were somewhat lower. The 28-30 fuel moved at $1.00 to $1.05 all week. The 24-26 grade of good cold test was at $0.85 flat Monday and sold the rest of the week at $0.825 to $0.85. Sales of 24-26 grade were reported at $0.80 but this goods had a fairly high cold test. The 22-26 fuel sold at $0.825 to $0.85 the first part of the week and at $0.80 to $0.825 during the final days. Fuel oil of 18-22 gravity sold mostly at $0.775 to $0.80 with some material moving at $0.75. Quotations on Smackover crude fuel continued unchanged at $1.025 to $1.05.

Occasional periods of precipitation are forecast for next week over S. O. Indiana territory. Temperatures will rise Monday and Tuesday and will fall again toward the middle of the week.

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Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of New York—T.w. and s.s. prices gasoline 2 cents, Albany, **Oct. 1,** and 2 cents **Oct. 15,** to 13 cents and 15 cents respectively.

T.w. and s.s. prices reduced 2 cents, Syracuse, to 15 cents and 17 cents, Oct. 15.

* * *

Standard of Kentucky—T.w. and s.s. prices gasoline reduced 1 cent, Louisville, to 18 cents and 21 cents respectively, including 5 cent state tax, **Nov. 19.**

Price Cutting in Syracuse

SYRACUSE, N. Y., Nov. 21.—Gasoline is retailing here as low as 12 cents per gallon, while the larger oil companies including national marketers, are posting and obtaining 15 cents, according to an Independent jobber here. Actual posted tank wagon price, this jobber says, is 13 cents.

A price of 12 cents is posted at service stations at Fayetteville, six miles east on the main New York pike; 12.9 cents is posted by two smaller companies in Syracuse. Several smaller companies are also posting 14 cents here.

Fuel Prices Affect Low Gravity Crudes

HOUSTON, Nov. 17.—In announcing the establishment of a lower base for crude purchases under the price schedule of the Humble Oil & Refining Co., Nov. 16, President W. S. Farish made the following official announcement:

"The change made by the present price bulletin posted today simply puts into effect a gravity differential from 28 gravity down to 25 gravity and below. A differential of 2 cents per degree of gravity between 28 and 25 being put into effect; crudes below 25 being grouped together. This change is made necessary by reason of the fact that the value of the crude affected depends upon fuel oil values.

"Since the last price on these low gravity crudes fuel prices have fallen approximately 30 cents per barrel.

"The Nocona district is practically the only one in which the price change will affect oil in any considerable amount."

Below 25 gravity crude now takes a 90 cents a barrel price in the Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona districts. Crudes testing 25—25.9 gravity, $1.06; 26—26.9 gravity, $1.08; 27 to 27.9 gravity, $1.10. All other grades in the various districts where Humble buys were unchanged.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

(As posted by principal marketing companies)

(OIL PRICE HANDBOOK has t.w. and s.s. markets for whole year arranged for quick reference)

These Prices In Effect November 21, 1927

S.O. NEW JERSEY TERRITORY

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	16	2	18	20	14
Newark, N. J.	16	2	18	20	14
Annapolis, Md.	16	4	20	23	12
Baltimore, Md.	16	4	20	23	10
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	12
Danville, Va.	16	4½	20.5	*	14
Norfolk, Va.	16	4½	20.5	23.5	12
Richmond, Va.	14	4½	18.5	21.5	14
Roanoke, Va.	16	4½	20.5	23.5	14
Petersburg, Va.	16	4½	20.5	23.5	14
Charleston, W. Va.	16	4	20	23	14
Keyser, W. Va.	16	4	20	*	14
Parkersburg, W. Va.	13	4	17	20	14
Wheeling, W. Va.	16	4	20	23	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	23	14
Mt. Airy, N. C.	16	4	20	23	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	23	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

*New York City	17	0	17	21	15
Albany, N. Y.	13	0	13	15	15
Buffalo, N. Y.	15	0	15	18	14
†Rochester, N. Y.	13	0	13	16	13
Syracuse, N. Y.	15	0	15	17	15
Boston, Mass.	17	0	17	18	15
Augusta, Me.	17	4	21	23	15
Manchester, N. H.	17	3	20	22	15
Burlington, Vt.	17	3	20	22	15

*In steel barrels.

†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 4c below the above posted prices which apply on its Socony grade.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*22	14
Philadelphia, Pa.	15	*	15	*21	14
Allentown, Pa.	16	*	16	*22	14
Erie, Pa.	12	*	12	*18	14
Scranton, Pa.	16	*	16	*22	14
Altoona, Pa.	16	*	16	*22	14
Dover, Del.	16	3	19	22	14
Wilmington, Del.	16	3	19	22	14
Providence, R. I.	17	2	19	19	15
Boston, Mass.	17	0	17	17	15
Springfield, Mass.	17	0	17	17	15
Worcester, Mass.	17	0	17	17	15
Hartford, Conn.	19	2	21	22	15
New Haven, Conn.	19	2	21	21	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	13	5	18	21	15.5
Louisville, Ky.	13	5	18	21	15
Covington, Ky.	14	5	19	22	15.5
Clarksdale, Miss.	13	4	17	20	12.5
Gulfport, Miss.	††14.5	4	††18.5	21.5	14
Jackson, Miss.	13	4	17	20	13.5
Natchez, Miss.	12 5	4	16.5	19.5	14
Vicksburg, Miss.	12.5	4	16.5	19.5	14
Birmingham, Ala.‡	14	4	18	21	15.5
Mobile, Ala.‡	13	4	17	20	15
Montgomery, Ala.*‡	15	4	19	22	16.5
Atlanta, Ga.	12	4	16	18	†15.5
Augusta, Ga.	15	4	19	22	†16.5
Macon, Ga.	15	4	19	22	†16.5
Savannah, Ga.	13	4	17	19	†14.5
Jacksonville, Fla.°	13	5	18	21	14
Miami, Fla.°	15	5	20	23	15.5
Tampa, Fla.°	13	5	18	21	14
Pensacola, Fla.°	**14	5	**19	22	14

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

‡Alabama gasoline prices include 1/40 of 1c inspection fee, effective Oct. 1, 1927.

†Georgia kerosene prices include 1c state tax.

°Florida gasoline prices include ½c inspection fee.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Chicago, Ill.	14	2	16	18	12
Decatur, Ill.	8.5	2	10.5	12.5	12.1
E. St. Louis, Ill.	13.1	2	15.1	17.35	11.2
Joliet, Ill.	14.4	2	16.4	18.4	12.3
Peoria, Ill.	10	2	12	12	12.1
Quincy, Ill.	14.2	2	16.2	18.2	11.9
Indianapolis, Ind.	11.2	3	14.2	15.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	12	3	15	15	13.4
Detroit, Mich.	12.8	3	15.8	17.8	13.7
Grand Rapids, Mich.	11	3	14	16	13.6
Saginaw, Mich.	14.9	3	17.9	19.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12.1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	12	2	14	14	12.9
Duluth, Minn.	13.5	2	15.5	17.5	12.9
Mankato, Minn.	15.1	2	17.1	19.1	12 7
Des Moines, Ia.	14	3	17	19	12.3
Davenport, Ia.	12.5	3	15.5	17.5	12.3
Sioux City, Ia.	14.1	3	17.1	19.1	11.9
Mason City, Ia.	14.5	3	17.5	19.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†12.9	2	14.9	16.9	10.6
St. Joseph, Mo.	†12.5	2	14.5	16.5	11.2
Fargo, N. D.	13	2	15	17	14.9
Grand Forks, N. D.	17.2	2	19.2	21.2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	4	19.5	21.5	13.9
Huron, S. D.	12.5	4	16.5	18.5	13.9
Wichita, Kans.	12.8	2	14.8	16.8	10.8
Bartlesville, Okla.	12.8	3	15.8	17.8	10.8

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline outside the city of Chicago is 1c for 50 gals. or more at one delivery; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

In Chicago, all above discounts apply, plus 1c additional for each gal. over 100 gals., except that the minimum required quantity to get a discount of 1c is 100 gals.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month, or 2400 gals. per year.

Discount on kerosene is 1c on 50 gal. dumps throughout territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. NEBRASKA

Omaha, Neb.	14.25	2	16.25	16.25	12.25
McCook	12.75	2	14.75	16.75	11.50
Norfolk	14.75	2	16.75	18.75	12.75
North Platte	15.75	2	17.75	19.75	13.50
Scottsbluff	15.25	2	17.25	19.25	13.00

CONTINENTAL OIL

Denver, Colo.	13	3	16	16	12.5
Pueblo, Colo.	12	3	15	15	14.5
Grand Junction, Colo.	17.5	3	20.5	22.5	18
Casper, Wyo.	14	3	17	19	13
Cheyenne, Wyo.	15	3	18	20	14.5
Butte, Mont.	19	3	22	22	19
Helena, Mont.	19.5	3	22.5	24.5	19
Salt Lake City, Utah	17.5	3½	21	23	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA*

Phoenix, Ariz.	19	4	23	27	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

*On Oct. 1, t.w. price at all points for spot sales, was advanced 1c. Very large portion of deliveries are under contract carrying above prices. New customers signing contracts and selling only one brand of gasoline, are given prices published in above table.

S. O. LOUISIANA

Little Rock, Ark.	11	5	16	16	12
Alexandria, La.	13	2	15	18	†14
Baton Rouge, La.	12	2	14	17	†12.5
Lake Charles, La.	13.5	2	15.5	18.5	†14
New Orleans, La.	13.5	2	*15.5	*17.5	†14
Shreveport, La.	13.5	2	15.5	18.5	†13
Lafayette, La.	13	2	15	18	†13.5
Bristol, Tenn.	16	3	19	22	14
Chattanooga, Tenn.	16.5	3	19.5	22.5	15
Knoxville, Tenn.	16.5	3	19.5	22.5	15
Nashville, Tenn.	15	3	18	21	15
Memphis, Tenn.	13.5	3	16.5	16.5	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
All Ohio points	14	3	17	19	14

MAGNOLIA PETROLEUM

Muskogee, Okla.	12	3	15	18	9
Oklahoma City	10	3	13	14	9
Tulsa, Okla.	10	3	13	14	9
Fort Smith, Ark.*	13	*3	16	19	12
Little Rock, Ark.	11	5	16	16	12
Texarkana, Ark. *	12	*3	15	18	12
Dallas, Tex.	11	3	14	17	11
Fort Worth, Tex.	11	3	14	16	10
Houston, Tex.	10	3	13	15	15
San Antonio, Tex.	10	3	13	15	10
El Paso, Tex.	11	3	14	15	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M. & P. Naphtha	Cleaner Naphtha
Chicago	16	18	18
Detroit	17.7	19.7	19.7
Kansas City	16.2	†18.2	†18.2
Milwaukee	16.7	*20.7	*20.7
Minneapolis	*20	*22	*22
St. Louis	15.9	17.9	17.9
New York	...	19	....

*Includes 2c state tax.

†Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline			Oil
		Total		
	T.W. Tax	T.W.	S.S.	T.W.
Toronto	19.5 3	22.5	26	21
Ottawa	19.5 3	22.5	26	21
Cochrane	24.5 3	27.5	36	26
Ft. William	24.5 3	27.5	31	23.5

MANITOBA

Winnipeg	*24.5 3	27.5	31	23.5

SASKATCHEWAN

Regina	27.5 0	27.5	32	26.5

ALBERTA

Edmonton	26.5 3	29.5	33	25.5
Calgary	22.5 3	25.5	29	23.5

BRITISH COLUMBIA

Vancouver	21 3	24	28	22

QUEBEC

Montreal	20.5 3	23.5	27	21
Quebec City	22.5 3	25.5	31	23
Three Rivers	22.5 3	25.5	30	23

NEW BRUNSWICK

St. John	24.5 3	27.5	32	24
Moncton	24.5 3	27.5	32	24

NOVA SCOTIA

Halifax	24.5 3	27.5	32	24
Sydney	24.5 3	27.5	32	24

PRINCE EDWARD ISLAND

Charlottetown	24.5 3	27.5	31	24

Note: In districts surrounding these points 1c additional is added to city price.

Foreign Buyers Express Interest In Present Gulf Market

Staff Special
NEW YORK, Nov. 19

SEVERAL cargo sales were reported in the Gulf export market and a number of inquiries for full cargoes and part cargoes of light oils and gas oil were in the market as the week ended. Quotations, generally speaking, were unchanged, showing but slight fluctuations throughout the week.

Stocks of 64-66, 375 end point gasoline are said to be low at two large Gulf coastal refineries. There was a firmer tendency noted in quotations for this grade. The continued narrowing of the price differential between U. S. Motor and 64-66, 375 end point gasoline, it is felt, has discouraged manufacture of the latter grade to the point where relative scarcity exists.

Foreign buyers expressed considerable interest in the market this week. Their buying for spring consumption is not due for 60 to 90 days yet, but exporters in New York were of the opinion foreign buyers believed the United States market about as low as it will go and with their stocks at a minimum, they are now taking advantage of the low prevailing prices and filling their available storage.

The forepart of the week a leading broker sold to a United Kingdom buyer approximately 21,000 barrels of 61-63, 390 end point gasoline at 8 cents and 40,000 barrels of 64-66, 375 end point gasoline at 8.25 cents for December-January loading at the Gulf. This same broker was working on two additional mixed cargoes for shipment to the United Kingdom late in the week and expected the business would be closed early next week.

Two mixed cargoes for shipment within the next 60 days were closed with French buyers. One comprising approximately 75,000 barrels of water white and prime white kerosene and 64-66, 375 end point gasoline sold at 7 cents, 6 cents and 8.25 cents, respectively. The largest item in the shipment is the 64-66, 375, the order including 50,000 barrels of this grade. The second cargo consisting of 55,000 barrels of prime white and water white kerosene, U. S. Motor and 64-66, 375 end point gasoline sold at 6 cents, 7 cents, 7 cents and 8.25 cents, respectively.

A 50,000 barrel cargo of U. S. Motor gasoline for January-February shipment was sold to a French account today at 7.125 cents. As business closed the following inquiries were still in the market:

French buyer—42,000 barrels of U. S. Motor gasoline for December-January shipment from the Gulf.

United Kingdom buyer—50,000 to 65,000 barrels of U. S. Motor, 61-63, 390 end point and 64-66, 375 end point gasoline and prime white kerosene for December-January shipment.

Roumanian buyer—42,000 barrels of U. S. Motor gasoline, also part cargo of U. S. Motor and 64-66, 375 end point gasoline for December-January shipment.

United Kingdom buyer—Approximately 12,000 barrels of 64-66, 375 end point gasoline.

French buyer—25,000 barrels of gas oil for late December shipment from the Gulf.

Roumanian buyers have purchased little refined oil in the United States recently; their inquiries in this country have been mostly for the purpose of determining market conditions. However, the Paris office of a leading refiner indicated this week that from now on Roumanian buyers are expected to be more active in the Gulf market.

No cargo sales of gas oil and bunker oil were reported this week and quotations for the most part were generally unchanged.

The New Orleans wax market was a shade easier this week, one refiner reporting sales of roundly 150 tons of white crude scale at 2.75 cents a pound. Aside from this there was little activity noted.

Late Fall Motoring Demand Helps Eastern Gasoline

Staff Special
NEW YORK, Nov. 19

GASOLINE markets at Atlantic seaboard points were generally unchanged this week from the standpoint of activity. For the most part, weather conditions were entirely favorable for late fall motoring and demand from the jobbing trade held up fairly well.

Advancing prices were made on Thursday. Atlantic Refining Co. advanced its quotations for U. S. Motor gasoline at Philadelphia to 8.50 cents for tank car shipment. A good many dealers were reluctant to move their quotations up at the present time, but it was generally felt at the end of the week that the status of prices was improved slightly, and that business placed next week doubtless would average higher.

Early in the week, there were persistent reports of U. S. Motor gasoline offered at under 8 cents in tank cars, f.o.b. Bayonne. Orders taken at under 8 cents were conceded to be in the minority, however, and up until the time the upward trend began the majority of dealers quoted 8 cents and the bulk of business went at this price. By Saturday enough important sellers were quoting 8.25 cents for this figure to be included in the market range.

The situation at Philadelphia was only slightly at variance with Bayonne, Atlantic apparently being the only refiner quoting 8.50 cents for U. S. Motor gasoline.

One large dealer in California gasoline with terminal in Baltimore advanced his price to 8.50 cents. Other sellers in this vicinity continue to quote 8 cents for this class of goods. The regular U. S. Motor gasoline was held at 8 to 8.25 cents.

New England refiners reported a comparatively slow market in their vicinity, although one leading refiner asserted he was just catching up with shipments which had been heavy the past two weeks to flood stricken areas. The U. S. Motor gasoline for the most part was 8 cents, f.o.b. New England refineries and seaboard terminals. The price for U. S. Motor gasoline, laid down Boston, was 0.25 cent lower at 8.50 cents.

Kerosene markets were largely unchanged at all points along the seaboard. Water white goods was freely available at 7 to 7.25 cents with several refiners quoting 7.50 cents.

A more spirited demand for gas oil was reported by the New York trade. New England refiners reported only spasmodic buying. Stocks of gas oil at New England refineries were said to be heavy and one refiner quoted 4.50 cents for 28-32 gravity goods.

Effective Wednesday, Nov. 16, Standard Oil Co. of New Jersey reduced bunker oil prices 5 cents a barrel. Other major refiners met the reduction immediately. Grade C is now $1.40 at New York, Baltimore and Norfolk, and $1.35 at Charleston. Some business was reported placed early in the week at $1.37 a barrel at Philadelphia.

GRAND RAPIDS, Mich.—Alexius P. Fleckenstein, president of Fleckenstein Visible Gasometer Co. of Michigan, with headquarters here, died on Nov. 18.

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926)

Eastern Domestic Market

(Prices for tank car lots, f.o.b. refinery or seaboard terminal, represent majority of quotations and sales.)

	Nov. 21	Nov. 14	Nov. 7
U.S. Motor gasoline, New York harbor	8.00 – 8.25	8.00	8.00
U.S. Motor gasoline, Philadelphia	8.00 – 8.50	7.875– 8.00	8.00
U.S. Motor gasoline, New England	8.00 – 8.25	7.875– 8.00	8.00 – 8.25
U.S. Motor gasoline, Baltimore	8.00 – 8.25	7.875– 8.00	8.00
U.S. Motor gasoline, Norfolk	8.00 – 8.25	8.00	8.00
U.S. Motor gasoline, Wilmington	†8.00	†8.00	
U.S. Motor gasoline, Charleston	7.75 – 8.00	7.75	7.75
U.S. Motor gasoline, Savannah	7.50	7.50	7.50 – 7.75
U.S. Motor gasoline, Jacksonville	7.50	7.50	7.50
California U.S. Motor gasoline, Baltimore	8.50	8.00	8.00 – 8.25
California U.S. Motor gasoline, Philadelphia	8.50	8.00	8.00
Water white kerosene, New York harbor	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
Water white kerosene, Philadelphia	7.25	7.25 – 7.50	7.25 – 7.50
Water white kerosene, Baltimore	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
Water white kerosene, New England	7.25	7.00	7.00
28-34 gas oil, New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
28-34 gas oil, New England	4.50 – 5.00	4.50 – 5.00	4.75
38-42 furnace oil, New York harbor	6.00	6.00	6.00
36-40 furnace oil, New England	6.00	6.00 – 6.25	6.00 – 6.25
Grade C bunker oil, New York harbor	$1.40	$1.45	$1.45
Grade C bunker oil, New England	$1.45 –$1.50	$1.50 –$1.55	$1.50 –$1.55
Diesel oil, New York harbor	$2.10	$2.10	$2.10
MEDICINAL OILS			
Russian 885-890 s.g., 325-330 vis.	$0.80 –$0.90	$0.80 –$0.90	$0.80 –$0.90
Russian 870-875 s.g., 150-155 vis.	$0.67 –$0.77	$0.67 –$0.77	$0.67 –$0.77
Russian 860-865 s.g., 80-85 vis.	$0.65 –$0.75	$0.65 –$0.75	$0.65 –$0.75

†Only one refiner quoting.

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are all Penna. products, prices per gal. in bbls.)

	Nov. 21	Nov. 14	Nov. 7
U. S. Motor gasoline	23.90	23.90	23.90
43-45, 150 w.w. kerosene	18.15	18.15	18.15
42-44, 110 s.w. kerosene	17.15	17.15	17.15
CYLINDER OILS			
Bright stock, dark	36.00 –37.00	36.00 –37.00	38.00 –39.00
600 D filtered	30.00 –31.00	30.00 –31.00	31.00
600 Warren E filtered	25.00	25.00	25.00
600 s.r. unfiltered	17.00 –17.50	17.00 –17.50	17.00 –17.50
650 s.r. unfiltered	18.50	18.50	18.50 –19.00
600 flash s.r.	20.00	20.00	20.00
630 flash s.r.	31.00 –33.00	31.00 –33.00	31.00 –33.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00	20.00	20.00
250 vis. No. 6 color	19.00	19.00	19.00
200 vis. No. 6 color	18.50	18.50	18.50
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	24.00	24.00	24.00
180 vis. No. 3¼ color	20.00	20.00	20.00
100 vis. No. 2¼ color	15.75	15.75	15.75
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	35.00	35.00	35.00
500 vis. No. 6½ color	33.00	33.00	33.00
400 vis. No. 7¼ color	31.00	31.00	31.00
300 vis. No. 6 color	30.00	30.00	30.00
200 vis. No. 3¼ color	24.00	24.00	24.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)

WHITE CRUDE SCALE (In barrels)

	Nov. 21	Nov. 14	Nov. 7
122-124 A.m.p.	2.75 – 2.875	3.00	3.00
124-126 A.m.p.	2.75 – 2.875	3.00	3.00
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	3.75 – 4.00	3.80 – 4.00	4.00
125-127 A.m.p.	3.75 – 4.00	3.80 – 4.00	4.00
128-130 A.m.p.	3.875– 4.125	4.00 – 4.25	4.00 – 4.25
130-132 A.m.p.	4.375– 4.50	4.50	4.50
133-135 A.m.p.	*5.50	*5.50	*5.50
135-137 A.m.p.	*5.75 – 6.00	*5.75 – 6.00	*5.75 – 6.00
YELLOW CRUDE SCALE			
124-126 A.m.p.	2.65	2.75	2.75

***Prices nominal.**

Gulf Export Market

(F.O.B. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over, except where otherwise noted.)

GASOLINE	Nov. 21	Nov. 14	Nov. 7
U. S. Motor	7.00 – 7.125	7.00	7.00
61-63, 390 e.p.	8.00	8.00	8.00
64-66, 375 e.p.	8.25	8.25	8.25
U. S. Motor, cases (cargoes)	$1.60	$1.60	$1.60
64-66, cases (cargoes)	$1.75	$1.75	$1.75
KEROSENE			
44 water white	7.00	7.00 – 7.25	7.00 – 7.25
41-43 prime white	6.00	6.00 – 6.25	6.00 – 6.25
Water white, cases (cargoes)	$1.60	$1.60	$1.60
Prime white, cases (cargoes)	$1.50	$1.50	$1.50
DOMESTIC GAS & BUNKER OILS			
*26-28 gas oil	4.125– 4.25	4.125– 4.25	4.125– 4.25
*30-32 gas oil	4.25 – 4.50	4.25	4.25
Grade C bunker oil	$1.20 –$1.30	$1.20 –$1.30	$1.20 –$1.30
Grade C bunker oil, cargoes	$1.10 –$1.15	$1.10 –$1.15	$1.10 –$1.15

***Translucent thru neck of 4 oz. bottle.**

MEXICAN CRUDE AND BUNKER OILS (F.O.B. Steamer, Tampico)

Heavy Panuco crude taxes to be paid	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10
Grade C bunker oil, for bunkering purposes, taxes paid	$1.35	$1.35	$1.35

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100° F.; cold test 0)
(Tanker, f.o.b. Houston)

100 vis. No. 2 unfiltered pale	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
200 vis. No. 3 unfiltered pale	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
300 vis. No. 3 unfiltered pale	9.00 –10.00	9.00 –10.00	9.00 –10.00
500 vis. No. 3½ unfiltered pale	11.00 –11.50	11.00 –11.50	11.00 –11.50
200 vis. No. 5½ red oil	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
300 vis. No. 5½ red oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
500 vis. No. 6 red oil	10.00	10.00	10.00

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Nov. 21	Nov. 14	Nov. 7
Gasoline, U. S. Motor, 53-55 Gravity	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
Gasoline, U. S. Motor, blends and special cuts	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
Gas Oil, 30-34, per barrel	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Diesel Oil, 27 plus, per barrel	$0.85 –$1.00	$0.85 –$1.00	$0.85 –$1.00
Bunker oil, 14-18, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Fuel oil, 14-18, per barrel	$0.75 –$1.00	$0.75 –$1.00	$0.75 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.70 –$1.80	$1.70 –$1.80	$1.70 –$1.80
Kerosene, 38-40 w.w., 251-150 flash	$1.35 –$1.50	$1.35 –$1.50	$1.35 –$1.50

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.65
Bradford District Oil in National Transit Lines (Bradford District)	2.65
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.55
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.55
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.50
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.25
Keister Grade in National Transit Lines (Butler Co.)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.40
Corning Grade in Buckeye Pipe Lines (Ohio)	1.45
Corning, O. heavy grade	1.35
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.50
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1922, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines $1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective March 14, 1927

Wooster	$1.57	Plymouth	$1.33
Lima	1.71	West. Kentucky	1.33
Waterloo	1.35	*Canadian Petro.	2.11
Indiana	1.48	*Oil Springs	2.18
Princeton	1.60	*Posted by Imperial Oil Ltd.	
Illinois	1.60		

OKLAHOMA, KANSAS And NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective March 12, 1927

28-28.9	$1.12	35-35.9	$1.26
29-29.9	1.14	36-36.9	1.28
30-30.9	1.16	37-37.9	1.30
31-31.9	1.18	38-38.9	1.32
32-32.9	1.20	39-39.9	1.34
33-33.9	1.22	40-40.9	1.36
34-34.9	1.24	41-41.9	1.38
42-42.9	$1.40	48-48.9	$1.52
43-43.9	1.42	49-49.9	1.54
44-44.9	1.44	50-50.9	1.56
45-45.9	1.46	51-51.9	1.58
46-46.9	1.48	52 and above	1.60
47-47.9	1.50		

Above schedule met on March 12, by Gulf, Mid-Continent Pet. Corp., and Empire; by Carter, Humble and the Texas Co. on March 14.

Humble Oil & Refining Co. Prices
(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

March 14, same schedule as Prairie in above fields, except these grades posted Nov. 16:

Below 25	$0.90	26-26.9	$1.08
25-25.9	1.06	27-27.9	1.10
Mirando, Tex.			$1.00

Magnolia Petroleum Co.
(In Oklahoma, Kansas and North and East Central Texas)

Effective Sept. 14, Magnolia posted same price schedule as Prairie in above fields, in Panola Co. and Iatan, Tex. district, except that Magnolia is paying $1.05 for all oil below 30 gravity.

Glasscock County	$0.80
Corsicana heavy	$1.00

Carter Oil Co.
(Oklahoma and Kansas)

March 14, same schedule as Prairie.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Aug. 23

Hutchinson, Carson and Wheeler Counties .. $0.75
Pampa, Gray County, Effective March 14:

28-28.9	$ .80	37-37.9	$ .98
29-29.9	.82	38-38.9	1.00
30-30.9	.84	39-39.9	1.02
31-31.9	.86	40-40.9	1.04
32-32.9	.88	41-41.9	1.06
33-33.9	.90	42-42.9	1.08
34-34.9	.92	43-43.9	1.10
35-35.9	.94	44 and above	1.12
36-36.9	.96		

WEST TEXAS

Humble Oil & Refining Co.

Effective Aug. 23

Crane, Upton, Crockett and Pecos Counties ... $0.60

NORTH LOUISIANA — ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto

Effective March 14, 1927

Below 28	$1.10	40-40.9	$1.36
28-28.9	1.12	41-41.9	1.38
29-29.9	1.14	42-42.9	1.40
30-30.9	1.16	43-43.9	1.42
31-31.9	1.18	44-44.9	1.44
32-32.9	1.20	45-45.9	1.46
33-33.9	1.22	46-46.9	1.48
34-34.9	1.24	47-47.9	1.50
35-35.9	1.26	48-48.9	1.52
36-36.9	1.28	49-49.9	1.54
37-37.9	1.30	50-50.9	1.56
38-38.9	1.32	51-51.9	1.58
39-39.9	1.34	52 and above	1.60

*Smackover, below 24	$0.85
* do 24 and above	1.00
Bellevue	1.25
Cotton Valley	1.00
**Urania, La	.75
†East El Dorado	1.00

**Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

*Smackover prices posted on Nov. 21 by S. O. La., Gulf, Shreveport-El Dorado Pipe Line and Atlantic Oil Producing Co.; on Nov. 19 by La. Oil Refg. Corp.

STEPHENS, ARKANSAS

Atlantic Oil Producing Co. and Louisiana Oil Refining Corp.

Below 28	$1.00	30-30.9	$1.06
28-28.9	1.02	31-31.9	1.08
29-29.9	1.04	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

California Gas Oil Scarce; Fuel In Tank Cars Up 5 Cents

LOS ANGELES, Nov. 19

THE petroleum market in California during the past week was unchanged generally. There were no changes in quotations. Majority of major companies are quoting U. S. Motor for export at 6 to 6.50 cents. Rumors continue that two or three cargoes of California gasoline have reached the New York market at a price that would net local shippers about 5.875 cents.

Gasoline in tank cars is moving to points outside of the state in fair volume at prices reaching from 7 cents to as high as 8.50 cents. Two small refineries this week quoted their products at 9.50 cents, this indicated that they were sold up and were not asking for orders. One small order was accepted late in the week at 7 cents.

Fuel for export to East coast points can be purchased at 80 cents against low of 85 cents some two or three weeks ago. Only two or three refiners will accept orders at 80 cents. Majority of the larger companies are asking from 85 cents up to $1. Fuel oil for movement in tank cars cannot be purchased at less than 65 cents this week against a low of 60 cents the previous week.

Gas oil continues to be scarce, especially the uncracked product. The lowest quotation available the past two weeks was 95 cents, while others ask more.

The kerosene market is rather quiet with not much goods moving. A large shipment of case goods went out the past week to the Orient and two cargoes have moved since the first of the month to foreign points. California refiners usually make only sufficient amounts of kerosene to meet demands.

It was reported this week, that the Shell Co. had purchased 1,000,000 barrels of refinable crude oil from the Associated Oil Co. Associated Oil Co. produces and purchases more crude oil than it has demand for. Shell Co. needs more crude than the company produces and purchases. The price paid by Shell has not been made public.

The crude market for the past several weeks has been rather firm with spot crude selling at 10 cents premium.

Los Angeles Shipments

LOS ANGELES, Nov. 19.—Petroleum shipments out of Los Angeles harbor to points outside of Pacific coast territory for week ended Nov. 12, reached total of 1,121,249 barrels, or a daily average of 160,178 barrels. This compares with a total of 1,138,199 barrels, or a daily av-

Purchasers, in All Fields (in Effect November 21)

OIL PRICE HANDBOOK published annually)

GULF COASTAL
Prices of The Texas Co.
(Effective March 14)

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS
Prices of Ohio Oil Co. and Midwest Refining Co.
(Salt Creek prices effective March 12)

‡Salt Creek 29-29.9	$1.14
" " 30-30.9	1.16
" " 31-31.9	1.18
" " 32-32.9	1.20
" " 33-33.9	1.22
" " 34-34.9	1.24
" " 35-35.9	1.26
" " 36-36.9	1.28
" " 37 and above	1.30
Elk Basin	1.33
Grass Creek light	1.33
Big Muddy	$1.25
Lance Creek	1.33
Rock Creek	1.25
Mule Creek	1.30
Rex Lake	1.10
‡Osage	1.33
‡Cat Creek, Mont.	1.33
Sunburst, Mont.	1.35
‡Hogback, N. Mex.	1.38
Artesia, N. Mex.	1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA
Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.76	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	....	.79	.79	.77	.77	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	....	.81	.81	.78	.78	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	....	.83	.83	.79	.79	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	$ .85	.85	.80	.80	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.85	.87	.87	.81	.81	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.85	.89	.89	.83	.82	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.85	.91	.91	.85	.83	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.86	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.87	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.88	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.89	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.91	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.93	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	.95	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	.97	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	.99	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.01	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.03	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.06	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	1.09	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	1.12	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	1.15	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

erage of 162,600 barrels, for the previous week.

Past week's shipments included 305,400 barrels of crude, 476,766 barrels of fuel, 82,262 barrels of gasoline, 127,592 barrels of kerosene, 48,022 barrels of Diesel, 71,632 barrels of gas oil and 9575 barrels of distillates. Atlantic foreign shipments included 101,812 barrels of fuel, and 80,000 barrels of gasoline. Atlantic domestic drew 301,949 barrels of crude. The rest of the total went to Pacific foreign points.

Few Small Sales Comprise New York Wax Market

NEW YORK, Nov. 19.—A comparatively dull week was experienced in the wax market, according to reports received from most dealers in New York. A few sales of small lots of white crude scale were recorded but for the most part trading was virtually at a standstill.

The trade was largely in accord regarding prices at which business went this week, although several dealers maintained higher quotations. White crude scale sold at 2.75 to 2.875 cents. Prices for fully refined waxes also were down, 123-125 a.m.p. selling at 3.75 to 4 cents a pound and the higher melting points quoted at 0.125 to 0.25 cent lower than a week ago. Prices for 133-135 a.m.p. and 135-137 a.m.p. continued largely nominal, however, due to scarcity.

Aside from fair demand for 600 steam refined, there was little activity reported in the lube market. Prices of all grades were stationary.

Crude Price Changes

HOUSTON—On Nov. 16 Humble Oil & Refining Co. re-established a price differential for oil below 28 gravity in Texas fields where it purchases on a gravity basis. Below 25 is now posted at 90 cents; 25-25.9, $1.06; 26-26.9, $1.08; and 27-27.9, $1.10. 28-28.9 is unchanged at $1.12, as are other higher grades. These new prices apply in Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona fields.

Since March 7, oil below 28 had been posted at the same price as the 28-28.9 grade.

* * *

SHREVEPORT—On Nov. 18 Louisiana Oil Refining Corp. reduced Urania crude 15 cents, making new price 75 cents per barrel. Natural Gas & Fuel Corp., the only other purchaser of this crude, immediately met the reduction.

On Nov. 19 Louisiana Oil Refining Corp. reduced Smackover light 15 cents, and heavy 5 cents, making 24 and above, $1, and below 24, 85 cents.

This cut was met on Nov. 21 by the Standard Oil Co. of Louisiana.

* * *

On Nov. 21 Gulf Refining Co. also met the cut on Smackover crude, and simultaneously reduced Calion, Ark. crude 5 cents, making new price 85 cents.

OIL STOCKS AND FINANCES

National Petroleum News

Record Breaking Dividends Paid This Year by Standard Group

NEW YORK, Nov. 21

DESPITE the depression in the oil industry the Standard Oil group of companies will distribute record breaking dividends to stockholders for 1927, according to a compilation made by Carl H. Pforzheimer & Co., specialists in Standard Oil securities. Preliminary estimates indicate the various companies will pay out $213,617,940 in cash this year, high record since the dissolution of the old Standard Oil Co. of New Jersey in 1911, and an increase of $13,290,346 compared with cash dividends paid in 1926.

In view of the generally unsatisfactory conditions in the oil industry during most of 1927, the increase in the amount of cash dividends to stockholders, in the opinion of the bankers, demonstrates the soundness of the conservative financial policies of Standard Oil management and their ability to maintain dividends through periods of severe depression in the industry.

Of the increased amount of cash dividends paid this year, special dividends by Indiana Pipe, Southern Pipe and Crescent Pipe Lines accounted for $3,416,000 and the remainder represented increased payments to stockholders.

Of the $213,617,940 to be paid during the year, it is estimated that the four leading companies will account for $130,357,418. Standard Oil Co. of New Jersey heads the group with payments totaling $38,423,860. While the company retired its preferred stock March 15, 1927, which reduced its dividend requirements $3,499,526 quarterly, the outstanding amount of common stock was increased which together with extra dividends of 12½ cents a share quarterly resulted in the total dividend payments in 1927 exceeding last year's dividends by $1,195,081.

Standard Oil Co. of California was the second largest, paying out $33,059,506 compared with $25,192,364 in 1926. Standard of Indiana ranked third in dividend payments, disbursing $31,978,164, approximately the same as last year. Standard of New York's dividend outlay is estimated at $26,895,888, an increase of $3,439,096 over last year. Prairie Pipe Lines Co.'s dividends increased $1,620,000 over 1926. Vacuum Oil Co. disbursed $12.494,160 during the year, approximately the same as last year. Imperial Oil's dividends of $9,712,000 are about $1,597,000 larger than last year and $949,405 was added to Humble Oil & Refining Co.'s dividends, bringing that company's disbursements up to $5,848,404 for the year.

Most of the important declarations for the last quarter have already been made and it is estimated that $55,724,472 will be disbursed in the final quarter. This is $7,996,032 greater than in the third quarter but $6,961,076 less than the final quarter of 1926. Vacuum was largely responsible for increasing the amount over the previous quarter by adding $1 extra, which increased the company's payments $2,498,832. Southern Pipe Line Co.'s dividend added $200,000 and Chesebrough Mfg. Co.'s extra dividend adds an additional $180,000.

The 1927 dividends are about 5.5 per cent on the combined invested capital and surplus of the Standard group which is about $3,900,000,000 (See NATIONAL PETROLEUM NEWS, Sept. 21, 1927, page 364). At the end of the third quarter of 1927 it seemed that the annual dividends would fall a little under 5 per cent for the year but continued payments of extra dividends by several of the large Standard companies and special dividend by a pipe line company brought the total to approximately 5.5 per cent.

The record of dividend payments by quarters since the dissolution is given in the accompanying table.

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
1927	$55,873,413	$54,291,615	$47,728,440	$55,724,472	$213,617,940
1926	40,580,317	‡50,618,451	46,427,278	62,685,548	200,327,594
1925	34,355,618	41,905,728	35,140,584	42,104,169	153,506,099
1924	34,975,867	40,699,592	34,712,810	40,000,286	150,388,555
1923	33,499,988	36,311,251	31,066,251	37,545,805	138,423,295
1922	28,206,068	29,205,349	28,628,099	*43,000,349	129,039,865
1921	28,987,611	29,131,727	27,609,227	29,586,727	115,294,292
1920	26,796,606	27,313,396	29,804,557	31,861,824	115,776,793
1919	26,759,502	26,397,119	24,418,169	28,326,687	105,901,477
1918	26,483,747	26,759,002	26,204,915	24,035,252	103,480,916
1917	23,097,668	26,428,252	22,968,751	27,463,252	99,957,923
1916	22,179,085	†30,406,454	21,980,168	24,062,168	98,627,875
1915	15,241,966	14,368,636	15,891,966	16,898,636	62,401,204
1914	17,904,636	16,426,306	14,430,626	14,931,306	62,692,884
1913	**55,652,423	15,552,096	15,213,746	21,377,096	107,795,361
1912	10,220,396	11,983,746	13,190,396	16,392,096	51,686,634

*Includes aggregate extra disbursements of $11,600,000 by four Eastern Pipe Line companies.

†Includes $6,613,786 disbursed by National Transit Co. in adjustment of capitalization.

**Includes $39,335,352 disbursed by Standard Oil Co. of New Jersey from repayment of loans to former subsidiaries.

‡Includes $4,000,000 paid by Southern Pipe Line Co. in partial liquidation.

BUFFALO, Nov. 18.—Stockholders of Swan-Finch Oil Corp. at annual meeting approved proposal to permit retirement of any part of the $150,500 preferred stock outstanding. The stock previously could be retired only as a whole. Retiring directors were re-elected.

New York Curb Bonds

Week Ending Nov. 18

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	100½	100	100½	+1⅝
Cities Service 5s '66	90	89⅛	90	+ ⅛
Cities Service 6s '66	103⅛	101¾	103⅛	+1⅜
Cities Service G 5½s '42	95¼	94¾	95	0
Empire Oil 5½s '42	93½	92¾	93⅜	+ ⅜
Galena S. O. 7s '30	93¾	92¾	92¾	0
Gulf Oil 5s '37	101¼	100½	101¼	+ ¾
Independent Oil 6s '39	95⅝	95⅛	95⅜	+ ⅜
Pure Oil 6½s '33	103	102⅞	102⅞	0
Richfield Oil 6s '41	97¾	96½	97¾	+1¼
S. O. of N. Y. 6½s '33	104½	104⅛	104⅜	+ ⅛
Sun Oil 5½s '39	101¼	100¾	101¼	+ ⅜
Trans. Cont Oil 7s '30	118¾	112¼	117	+4
Valvoline 7s '37	104¾	104¾	104¾	— ¾
Warner-Quin. 6s '42	97½	97	97½	+ ½

New York Bonds

Week Ending Nov. 18

	High	Low	Last	Ch'ge
Amer. Reb. deb. 6s	101⅝	101⅝	101⅝	+ ⅜
Assoc. Oil gold 6s	103¼	102¾	103	— ¼
Atlantic Refg. deb. 5s	103½	102¼	103	0
Barnsdall Corp. 6s	102⅝	102	102⅝	+2⅝
Barnsdall Corp. 6s ex-war	91¼	90½	91	+ ¼
Cal. Pet. 5s	95⅝	95⅛	95¼	+ ⅛
Cal. Pet. 5½s	100½	100	100⅜	+ ⅛
General Asphalt 6s	112	110¾	111⅛	— ⅞
General Petroleum 5s	102⅛	101¾	102	+ ¼
Humble Oil & Refg. 5½s	102⅝	102	102⅜	— ¼
Humble Oil 5s	100⅛	99⅞	100⅛	+ ⅛
Mid-Cont. Pet. 6½s	105⅛	105¼	105¼	0
Pan Amer. P & T 7s	105⅛	105⅛	105½	+ ⅛
Pan Amer. P & T 6s	103½	103⅛	103⅜	+ ⅜
Pan Amer. P & T 6s	97	95⅝	97	+2
Pierce Oil Corp. 8s	104	103	104	+1
Prod. & Refnrs. 8s ex war	113	112	112	0
Pure Oil 5½s	100⅜	100	100⅜	— ⅜
Simms Pet. cvt. 6s	102	100¾	102	+ ¼
Sinclair Con. Oil col. 7s	99	97⅜	99	+1¼
Sinclair Con. Oil con. 6½s	95	93	95	+1⅞
Sinclair Con. Oil 6s-D	98	96⅜	96¾	— ⅜
Sinclair Crude Oil 6s	95	94¾	95	+ ¼
Sinclair Pipeline 5s	94⅛	93½	93⅛	— ½
Skelly Oil 5½s	95	94¾	94⅞	+ ⅛
S. O. of N. Y. 4½s	97½	96⅝	97½	+ ⅞
S. O. of N. J. deb. 5s	104½	103⅝	104⅛	+ ⅜
Union Oil of Cal. 6s-A	108⅞	108¾	108⅞	0
Union Oil of Cal. 1st 5s	102½	101¾	101¾	+ ¾
Union Oil of Cal. 5s-C	99	98¾	98⅞	+ ⅛
White Eagle 5½s	95	95¼	95¼	— ¾

Transactions in Oil Shares on New York Stock Exchange

1926 High	1926 Low	1927 High	1927 Low		Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Nov. 19 Sales	First	High	Low	Last	Change
32⅞	24¼	37⅝	27⅝	(sh)	916,675	N.P.	Amerada Corp.	50cQ	Oct. 30, 27	400	29	30	29	30	+ ¼
74	39½	64⅞	35⅛	(sh)	209,180	N.P.	American Republics	.....	.....	4,500	50¼	51¼	49¾	49¾	+ ¼
59½	44¾	50¼	40	$	56,000,000	$25	Associated Oil	50cQ	Sept. 2, 27	400	41	43	41	43	+ 2
128⅜	97	131⅜	107		50,000,000	100	Atlantic Refining	$1Q	Sept. 15, 27	1,200	118½	119¾	118½	119¾	+ 1
120	115½	118½	111½		20,000,000	100	do pfd	$1.75Q	Nov. 1, 27	100	116½	116½	116½	116½	0
33½	23½	35½	20¾		25,000,000	25	Barnsdall Corp. A	s62½cQ	Nov. 15, 27	17,000	24½	26¾	24½	26¾	+ ½
29½	22½	32½	20½		3,842,400	25	do B	s62½cQ	Nov. 15, 27	100	26¼	26¼	26¼	26¼	+ ¼
68⅛	29¾	32⅛	20		51,523,950	25	California Petroleum	25cQ	Sept. 1, 27	400	23½	23⅞	23½	23½	— ½
94¼	50	96¾	65		24,355,000	100	General Asphalt	.....	.....	1,900	84¼	84¾	83½	83¾	0
140½	94¼	144¼	107¼		6,874,200	100	do pfd	$1.25Q	Sept. 1, 27	100	127	127	127	127	1¾
72	50¼	175¾	60¼		25,000,000	100	Houston Oil	.....	.....	6,700	163¾	164½	162	163	+ 1
84	19⅝	32¾	17⅜	(sh)	500,000	N.P.	Independent Oil & Gas	25cQ	Oct. 31, 27	1,400	26¼	25¾	25¼	25¼	— ¼
13¾	7¼	12⅛	7¼	$	3,280,340	$10	Indian Refining	.....	Dec. 15, 20	300	9	9⅛	9¼	9¼	— ⅛
12½	8	12	7¾		4,550,110	10	do ctfs	.....	.....	200	8⅞	8⅞	8⅞	8⅞	0
104	90	112	99		2,296,400	100	do pfd	.....	Dec. 15, 21	.....	.....	.....	.....	.....	.....
24½	19¾	36¼	20½	(sh)	3,992,067	N.P.	Lago Oil & Transport	75cQ	Aug. 1, 27	300	35⅞	36⅞	35⅞	36½	— ½
19⅞	12	18⅛	10	(sh)	1,131,290	N.P.	Louisiana Oil Refining	.....	.....	1,200	10¾	11	10¾	11	+ ¼
98	93	97	86	$	4,000,000	$100	do pfd	$1¾Q	Nov. 15, 27	20	88	88	88	88	0
28⅞	16½	22⅝	12	(sh)	330,000	N.P.	Maracaibo Oil	.....	.....	100	12¾	12¾	12¾	12¾	+ ⅜
63⅜	49¼	58½	31	(sh)	2,316,401	N.P.	Marland Oil Co.	.....	Mar. 31, 27	7,700	36¼	37	36	36¼	— ⅜
250	225	250	200	$	45,942,800	$100	Mexican Petroleum	$3Q	Oct. 20, 27	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....		12,000,000	100	do pfd	$2Q	Oct. 20, 27	.....	.....	.....	.....	.....	.....
13¾	6	9¼	3	(sh)	945,839	N.P.	Mexican Seaboard	.....	Nov. 15, 24	4,400	4½	7¾	4½	6½	— 1
37	27½	39⅝	25½	(sh)	1,357,800	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	1,500	28¾	28⅞	28¾	28½	0
104¼	90	105	97	$	6,718,000	$100	do pfd	$1.75Q	Sept. 1, 27	100	103¾	103¾	103¾	103¾	0
2½	¾	3¾	1⅝		24,435,000	10	Middle States	.....	July 1, 23	600	2¼	2½	2¼	2½	+ ¼
1⅝	½	2⅝	1⅛		5,356,660	...	do ctfs	.....	.....	200	1⅝	1⅝	1⅝	1⅝	0
2¼	1	1⅞	1	(sh)	3,500,000	N.P.	Pacific Oil	.....	.....	800	1¼	1¼	1⅛	1⅛	— ⅛
76½	56½	65⅞	45½	$	48,807,500	$ 50	Pan American P. & T.	$1Q	Oct. 20, 27	900	48⅞	51¼	48⅞	51	+ ½
78¾	56⅞	66⅝	45⅝		121,094,850	50	do B	$1Q	Oct. 20, 27	4,700	49⅝	52⅛	49⅝	51¾	+ ¼
46	30	37⅞	16¾	(sh)	400,000	N.P.	Pan American Western B.	.....	Jan. 30, 27	200	21	21	21	21	0
62	4¾	18⅞	8	(sh)	198,770	N.P.	Panhandle P. & R.	.....	.....	2,600	16¼	16¾	14	14¾	— ½
99¾	51	83¾	58¾	$	2,935,200	$100	do pfd	.....	July 2, 23	1,100	74⅞	83	74⅞	82	— 1
57⅜	40	60¼	36½	(sh)	2,406,796	N.P.	Phillips Petroleum	75cQ	Oct. 1, 27	4,400	42½	43½	42⅜	42½	— ⅜
1⅞	⅜	1⅜	½	$	29,622,925	$ 25	Pierce Oil Corp.	.....	.....	100	⅝	⅝	⅝	⅝	0
27¼	11½	24	13½		15,000,000	100	do pfd	.....	Feb. 1, 22	.....	.....	.....	.....	.....	.....
7	2¼	5½	2½	(sh)	2,500,000	N.P.	Pierce Petroleum	.....	.....	200	3¾	3⅞	3¾	3⅞	+ ⅛
20¾	11	33⅜	16¾	$	37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	300	27	27	27	27	0
41¾	30¾	50	36⅞		2,845,350	50	do pfd	.....	May 1, 25	10	42¾	42¾	42	42	— ¼
31	25¼	33⅓	25		75,939,250	25	Pure Oil Co.	37½eQ	Sept. 1, 27	800	26	26⅛	26	26	— ¼
112¾	106	114	111⅜		13,000,000	100	do 8% pfd	$2Q	Oct. 1, 27	100	113⅜	113¾	113¾	113¾	+ ⅜
57⅜	47⅛	58	45	(sh)	616,605	13.40	Royal Dutch, N. Y. shares	$1.80	Aug. 2, 27	300	47½	48⅜	47½	48	+ ¼
40¾	40½	47⅞	41⅜	(sh)	78,389	F2	Shell Transport & T.	$1.45	July 22, 27	200	44	44	44	44	0
31	24	31¾	24⅜	(sh)	10,000,000	N.P.	Shell Union Oil	35cQ	Sept. 30, 27	100	26½	27	26½	27	0
114	103	111	107½	$	18,350,400	$100	do pfd	$1½Q	Nov. 15, 27	.....	.....	.....	.....	.....	.....
28⅝	15⅜	22¾	14¼		7,208,080	10	Simms Petroleum	.....	Apr. 1, 27	200	19¼	19¾	19¼	19¾	+ ⅛
24⅞	16¾	22⅝	15	(sh)	4,501,339	N.P.	Sinclair Consolidated	.....	May 31, 24	1,300	15⅞	16¼	15⅞	16¼	0
99½	90	103¼	97	$	16,907,000	$100	do pfd	$2Q	Nov. 15, 27	100	98	98	98	98	0
37¾	26⅝	37⅜	24½		27,396,590	25	Skelly Oil Co.	50cQ	Sept. 15, 27	1,600	27¼	27½	27¼	27½	— ⅛
63¾	52⅝	60¾	50⅜	(sh)	13,016,434	N.P.	S. O. California	62½cQ	Sept. 15, 27	600	55⅝	56¼	56⅛	56¼	+ ¼
46¾	37⅝	43¾	35¼	$	606,243,050	$25	S. O. New Jersey	‡25cQ	Sept. 15, 27	8,400	40½	40⅝	40⅜	40½	
33¼	32½	34½	29¾		424,348,275	25	S. O. New York	40cQ	Sept. 15, 27	5,000	32⅜	32⅝	32¾	32⅜	— ⅛
41⅝	30⅜	34⅞	30	(sh)	1,171,508	N.P.	Sun Oil	25cQ	Sept. 15,27	500	32⅞	34¾	32½	34¾	+ 2
.....	.....	100¼	99	$	5,000,000	$100	do pfd	$1.50Q	Sept. 1, 27	300	99¾	100¼	99¾	100¼	+ 1⅜
5¼	1	6½	3½	(sh)	1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	5,400	3¾	3¾	3½	3½	0
57⅞	53⅛	58	45	$	180,428,225	25	The Texas Corp.	75cQ	Oct. 1, 27	3,200	52⅛	53¼	52⅛	53⅛	0
19½	12	18⅞	12		8,380,340	10	Texas Pacific Coal & Oil	15c	Sept. 30, 27	1,000	13½	14	13½	13¾	0
39¼	37	29½	19	(sh)	2,168,264	N.P.	Tide Water Oil Co.	20cQ	Sept. 30, 27	100	22¼	22¼	21⅞	21⅞	— ⅛
103	87¼	90⅛	85	$	20,705,200	$100	do 5% pfd	$1.25Q	Nov. 15, 27	400	86	85½	†85	85	— ⅜
....	....	19⅜	15⅜	(sh)	4,795,934	N.P.	Tide Water Associated	.....	Aug. 1, 27	1,100	17	17	17	17	0
.....	.....	90¾	85	$	72,795,900	$100	do pfd	$1.50Q	Oct. 1, 27	1,500	87¾	87¾	87½	88	+ ½
5½	3	10¼	3¾	(sh)	3,742,029	N.P.	Transcontinental Oil	.....	.....	21,000	8¾	*10¼	8¾	10	— ⅛
58⅝	37¼	56⅜	39⅜	$	40,759,475	$ 25	Union Oil of California	50cQ	Nov. 10, 72	600	45	45⅛	44¾	44¾	— ¼
120⅝	84¾	121½	94		30,734,000	100	Union Tank Car Co.	$1.25Q	Sept. 1, 27	11,400	110	*121½	110	120	+ ¼
....	....	28½	24½	(sh)	240,000	N.P.	Warner Quinlan	50cQ	Oct. 1, 27	1,200	25¾	26½	25⅞	26½	+ ⅝
29¾	25⅜	27½	21¼	(sh)	490,000	N.P.	White Eagle Oil & Refining	50cQ	Oct. 20, 27	300	22⅞	23	22⅞	23	— ½

*New High †New Low xEx-Dividend ‡Also extras s-Stock Total Sales 132,830

Oil Dividends

	Amount	Payable	Stock of Record
Chesebrough Mfg. q.	$1	Dec. 28	Dec. 10
do extra	$1.50	Dec. 28	Dec. 10
Cities Service m.	½%	Jan. 2	Dec. 15
do stock m.	½%	Jan. 2	Dec. 15
do pfd. m.	½%	Jan. 2	Dec. 15
do pref. B m.	½%	Jan. 2	Dec. 15
Indian Pipe Line spl.	$15	Dec. 22	Dec. 2
Ohio Oil q.	50c	Dec. 15	Nov. 21
do extra	25c	Dec. 15	Nov. 21
Solar Refining s. a.	$5	Dec. 20	Nov. 30
S. O. New Jersey q.	25c	Dec. 15	Nov. 25
do extra	12½c	Dec. 15	Nov. 25
Sun Oil q.	25c	Dec. 15	Nov. 25
do stock extra	3%	Dec. 15	Nov. 25
Shell interim	2s	Jan. 5	.....
Royal Dutch interim	10%	Jan. 5	.....
Texas Corp. q.	75c	Jan. 1	Dec. 2

Cleveland Stock Market

November 17

	Par Value	Bid	Asked	Last Sale
Canfield Oil Co.	100	...	...	...
do pfd	100	100	...	100
Fred G. Clark	10	2	3½	2
National Refining Co.	25	...	...	33¾
do pfd	100	131	...	130½
Paragon Refining Co.	25	8½	9	8½
do pfd	100	100	102	100

x Ex-Dividend.

PITTSBURGH STOCK EXCHANGE

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended Nov. 18 Sales	First	High	Low	Last	Ch'ge
8½	5¾	9⅛	6⅛	$ 10	Arkansas Nat. Gas.	8,825	9⅛	9⅜	9⅛	9⅜	+ ⅛
90½	79¾	98¾	80⅞	100	Columbia Gas	.....	.....	.....	.....	.....	.....
101⅝	95	107⅞	100	100	do pfd	12	107⅞	*107⅞	107⅞	107⅞	+ ⅞
17	12½	15	9½	10	Devonian Oil	.....	.....	.....	.....	.....	.....
116½	112	117	115	100	Duquesne Lt. 7% pfd.	62	115½	117	115½	117	0
10	5¼	12¼	6	N.P.	Houston Gulf Gas.	.....	.....	.....	.....	.....	.....
46	39	55¾	37¼	$ 25	Lone Star Gas	6,763	53	55½	53	55¼	+ 2¼
47¾	33⅛	22¾	22¼	25	Ohio Fuel Corp.	.....	.....	.....	.....	.....	.....
47½	42	21⅝	21	....	do ctfs	.....	.....	.....	.....	.....	.....
6¾	5	6	5	....	Ohio Oil & Gas	.....	.....	.....	.....	.....	.....
34	21	21	21	25	Oklahoma Nat. Gas	.....	.....	.....	.....	.....	.....
21	19¼	23¾	20¼	....	do ctfs	.....	.....	.....	.....	.....	.....
5⅜	3⅛	3⅞	3	5	Pittsburgh Oil & Gas	50	3¼	3¼	3¼	3¼	0
10	7⅛	8	5½	10	Salt Creek Cons.	85	6¼	6¾	6¼	6¾	+ ¾
27	8	26½	17	10	Tidal Osage	10	22	22	22	22	+ 1
45	40	43	33	N.P.	Waverly Oil Wks. "A"	80	33½	33½	33½	33½	0

PITTSBURGH CURB EXCHANGE

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended Nov. 18 Sales	First	High	Low	Last	Ch'ge
3⅜	2½	3½	2¼	$ 5	Columbia Synd.	.....	.....	.....	.....	.....	.....
20	.06	.18	.18	5	Duquesne Oil	.....	.....	.....	.....	.....	.....
91½	85	95	88	25	Gulf Oil Corp.	.....	.....	.....	.....	.....	.....
79	79	105	93	100	Houston Gulf Gas pfd	.....	.....	.....	.....	.....	.....
12	.7½	10¾	6⅛	N.P.	Leonard Oil & Dev.	.....	.....	.....	.....	.....	.....
30¼	29	32	31¼	$ 25	Oklahoma Gas	.....	.....	.....	.....	.....	.....
2	.15	2.70	.60	10	Omar Oil & Gas	1,800	.75	.75	.75	.75	— .05
....	....	2¼	1¾	....	Pittsburgh Oil Dev.	.....	.....	.....	.....	.....	.....
2	1¾	2¼	2¼	5	do pfd	1,000	23	23½	22½	23½	+ 1
33½	20	31	19	10	Plymouth Oil	.....	.....	.....	.....	.....	.....
7	3	6	5	5	States Oil	.....	.....	.....	.....	.....	.....
3½	2	3¼	1½	1	Texon Oil & Land	800	1⅞	1⅞	1⅞	1⅞	0
25¾	8	23¾	18	10	Tidal Osage (non-vtg).	.....	.....	.....	.....	.....	.....

*New high †New Low xEx-Dividend

Standard Oil Stock Traded in New York

1926 High	1926 Low	1927 High	1927 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Nov. 18 Sales	First	High	Low	Last	Change
21	16⅜	21⅜	17⅝	£ 4,000,000	£1	Anglo-American Oil	60 11/16c	May 31, 27	2,300	18⅞	19½	18⅞	19½	+ ⅝
20¼	16½	20½	17⅜	.....	£1	do ctfs. non-voting	.....	.....	600	19	19⅜	19	19⅛	+ ¼
2¼	.75	1⅞	.75	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	1,000	1½	1⅞	1½	1⅞	+ ⅜
5	2⅜	4½	2½	$ 000,000	$ 10	do pfd	.....	.....	500	4⅜	4½	4⅜	4½	+ ½
75	65	69	50	1,000,000	25	Borne Scrymser	‡$1S.A.	Oct. 15, 27	100	58	58	58	58	0
59½	42	60	45	10,000,000	50	Buckeye Pipe Line	$1Q	Sept. 15, 27	1,700	58	60	58	59¾	+ 2¼
82½	65	126	76½	3,000,000	25	Chesebrough Mfg.	$1Q	Sept. 30, 27	300	122	125	121	121	+ 2
25⅝	17½	22⅝	16¼	38,805,260	10	Continental Oil	25cQ	Sept. 15, 27	28,500	18⅛	18¾	18	18⅝	+ ⅝
137	102	137	89	3,000,000	100	Cumberland Pipe Line	$2Q	Sept. 15, 27	50	95	95	95	95	0
63¾	43	66½	47	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 27	950	62½	66½	62½	64	+ 2
32½	9⅛	13½	6½	16,000,000	100	Galena Signal Oil	.....	June 30, 25	300	7½	7¾	7½	7¾	+ ½
94½	35	59¾	31	4,000,000	100	do new pfd	.....	June 30, 26	10	33	33	33	33	— 7
97½	40	60¼	36	2,000,000	100	do old pfd	.....	June 30, 26	45	45	45	45	45	— 1
99⅝	52	67⅜	54	73,117,577	25	Humble Oil & Refining	‡30cQ	Oct. 1, 27	4,300	63⅞	67⅜	63⅞	67¼	+ 2¾
144½	125¼	178	123¾	20,000,000	100	Illinois Pipe Line	$6S.A.	June 15, 27	2,300	172	177½	172	176	+ 6
39¾	32½	64¾	37¾	(sh) 6,491,952	N.P.	Imperial of Canada	‡25cQ	Sept. 1, 27	1,900	60⅝	61	60¼	60¼	— ⅜
70	54½	89¼	61	$ 5,000,000	$50	Indiana Pipe Line	‡$1Q	Nov. 15, 27	5,150	84¾	89¼	84¾	88	+ 1
35¼	28¾	34¼	28	(sh) 7,118,138	N.P.	International Petroleum	25c	Nov. 15, 27	14,200	33¾	33¾	33	33⅛	— ⅝
20¾	12½	23½	13½	$ 6,362,500	$12½	National Transit Co	25cQ	Sept. 15, 27	9,800	21	23½	20	23⅛	+ 3⅜
51½	27⅜	44½	31¼	5,000,000	100	New York Transit	.....	July 15, 26	1,900	39½	44½	39½	43¾	+ 4½
80½	64	96	70	4,000,000	100	Northern Pipe Line	$3S.A.	July 1, 27	550	94	96	94	95	+ 2
67⅝	55¾	65¼	52	60,000,000	25	Ohio Oil Co	‡50cQ	Sept. 15, 27	33,900	64⅜	65¼	62	65¼	+ 1¾
24⅝	15	38½	12	10,000,000	25	Penn Mex. Fuel	.....	May 21, 25	1,800	36	36½	35	35	— 1
60¼	48	55½	45⅜	60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	8,400	49¾	50½	49½	50⅛	+ ⅝
137½	122¼	190	132	81,000,000	100	Prairie Pipe Line	$2.50Q	Oct. 31, 27	3,000	180	190	180	188½	+ 3½
220	184½	201½	175½	4,000,000	100	Solar Refining	$5S.A.	June 20, 27	290	184	193½	184	192	+11½
27	21	27¼	15½	5,000,000	50	Southern Pipe Line	.....	Mar. 1, 26	200	21½	21⅞	21½	21⅞	+ ⅜
50	34½	41½	34½	20,000,000	25	South Penn Oil	50cQ	Sept. 30, 27	800	38½	39½	38½	39⅜	+ ⅞
57	49	78	55¼	3,500,000	100	South West Pa. Pipe Lines	$1Q	Oct. 1, 27	300	77½	78	77½	78	+ 2
70½	60½	81½	64¾	228,415,463	25	S. O. Indiana	‡62½cQ	Sept. 15, 27	44,500	75¾	81½	75⅜	80	+ 4¼
36½	16½	20⅞	15½	8,000,000	25	S. O. Kansas	.....	June 16, 24	1,400	16	17½	16	16¾	+ ¾
134¾	108	130	111½	17,012,599	25	S. O. Kentucky	$1Q	Sept. 30, 27	7,700	121½	130	121½	128	+ 5½
51⅜	42	49½	42	4,559,850	25	S. O. Nebraska	63cQ	Sept. 20, 27	1,400	43¾	44½	43¾	44½	+ 1
672	288	863¼	73	14,000,000	25	S. O. Ohio	62½cQ	Oct. 1, 27	200	75¾	76½	75¾	76½	+ 1½
120½	116½	122	117¼	7,000,000	100	do pfd	$1.75Q	Sept. 1, 27	.....	.....	.....	.....	.....	.....
23	15½	21	14½	861,466	25	Swan Finch Co	.....	Nov. 1, 19	150	19½	20	19½	20	+ 1
109¾	90¼	147¾	95⅛	62,470,800	25	Vacuum Oil	‡50cQ	Sept. 20, 27	40,400	143⅛	147¾	142½	147¾	+ 3⅜

*New high †New low xEx dividend ‡Also extras.

NEW YORK, Nov. 18.—Montana Cities Gas Co. has been organized to construct and operate a natural gas pipe line, purchase, transport and sell natural gas. The line with gathering branches will be about 102 miles long and extend from the Shelby gas field to Great Falls. The line will have a capacity of about 25,000,000 cubic feet a day.

STANDARD OIL ISSUES

CONTINENTAL OIL COMPANY

10-YEAR 5¼% DEBENTURES

FOR INVESTMENT TO YIELD 5⅜%

CARL H. PFORZHEIMER & CO.

Specialists in Standard Oil and Miscellaneous Oil Securities

25 Broad Street New York

New York Curb Market

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended Nov. 18 Sales	First	High	Low	Last	Change
6¾	45	2 1/16	.55	$5	Amer. Con. Oilfields	49,000	.85	.91	.82	.85	—.05
14½	4	7½	3	N.P.	Amer. Maracaibo	8,100	3¼	3½	3¼	3¼	— ⅛
8⅜	5¾	9¾	6¾	$10	Arkansas Nat. Gas	5,100	9⅜	9½	9⅛	9¼	0
20⅜	14⅜	20½	15½	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
85¼	60	36¼	20½	N.P.	British American	500	36¼	36¼	35	35½	— 1½
28⅜	9¼	28¼	14⅜	25c	Carib Syndicate(new)	5,100	19¼	21¾	19	20¾	+ 1½
....	....	26	16½	...	do ctfs. of deposit	.....	.....	.....	.....	.....	.....
51	37½	58¾	40¼	$20	Cities Service	14,200	51⅛	51¼	50½	51	— ¼
92½	82⅜	95	87	100	do pfd	4,000	94⅜	95	94½	94⅝	— ⅜
8⅜	7⅜	8¾	7⅜	10	do pfd. B	200	8⅝	8⅝	8⅝	8⅝	— ⅛
25¼	19	29¼	22½	10	do banker's shares	.....	.....	.....	.....	.....	.....
3½	1¾	3¼	1¾	$1	Colombia Syndicate	5,600	1⅞	2	1¾	1⅞	— 1/16
10⅜	8⅜	9½	6¾	10	Consolidated Royal	.....	.....	.....	.....	.....	.....
16	10	14⅜	9⅞	N.P.	Creole Syndicate	15,000	11¼	11¼	10¼	10½	— ⅜
7⅜	1⅜	3	x63	N.P.	Crown Central	300	.85	.85	.76	.76	— .22
8½	½	12	4	...	Darby Petroleum	100	7	7	7	7	0
....	....	11½	5	...	do trust ctfs.	100	7	7	7	7	0
4	1¾	2½	1¼	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
19	13	16¾	7⅛	N.P.	do pfd	.....	.....	.....	.....	.....	.....
7½	2½	3⅜	1	N.P.	Gibson Oil	7,900	2	2	1¾	2	0
2	.63	1⅜	40	N.P.	Gilliland ctfs.	.....	.....	.....	.....	.....	.....
98	82	104	86¼	$25	Gulf Oil Corp.	23,600	97	104	96¾	103	+ 5½
3⅜	1	2¼	1⅛	N.P.	Kirby Petroleum	2,500	1⅜	1⅞	1⅜	* 1⅞	+ ⅝
12¼	5¾	10⅞	5⅜	N.P.	Leonard Oil & Dev.	2,300	7⅛	7⅛	5⅛	6	— 1⅛
27	20	27½	20	N.P.	Lion Oil & Refg.	500	22	22¼	22	22	0
46	31	56	37	$25	Lone Star Gas	4,800	54	55¾	53½	55½	+ 2½
2¾	2	2⅜	.87	1	Magdalena Synd.	10,400	1⅜	1¾	1¼	1½	+ ⅜
5½	1⅞	3	1½	10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
1¾	1¼	1½	1	1	Mountain & Gulf	100	1¼	1¼	1¼	1¼	0
26	23	26⅞	22¾	10	Mountain Producers	9,800	24⅝	25⅛	24⅝	25⅛	+ ½
6¾	5	5⅞	4⅝	5	New Bradford	200	4⅞	4⅞	4¾	4¾	— ⅛
11¾	2	6¾	4	10	New England Fuel	.....	.....	.....	.....	.....	.....
17	9¼	16	9¼	1	New Mex. & Ariz.	400	10¼	10¼	9½	9½	— ¾
17	8	13¼	9	25	New York Oil	200	11½	11½	11½	11½	0
12⅛	8¾	12⅝	10	N.P.	North Cent. Texas	200	10½	10½	10½	10½	0
44¾	33	....	....	$25	Ohio Fuel Corp.	.....	.....	.....	.....	.....	.....
33	28½	27½	21¼	...	Okla. Nat. Gas ctfs.	.....	.....	.....	.....	.....	.....
10¼	5¾	9¾	1¾	N.P.	Pandem	7,100	3⅞	4¼	3⅞	4⅛	+ ⅛
12¼	11¾	12⅜	7	N.P.	Pantapec Oil	.....	.....	.....	.....	.....	.....
2¾	.20	.37	.25	N.P.	Peer Oil Corp.	.....	.....	.....	.....	.....	.....
22¾	12	13½	7⅛	$10	Pennok Oil	300	7⅛	7⅛	7⅛	7⅛	0
38	14⅜	24⅝	13	25	Red Bank Oil	100	13	13	13	13	— 1
30¼	12	15½	2	N.P.	Reiter-Foster	4,300	8	8¼	7¾	8	0
27½	22	27½	15	$25	Richfield Oil	500	23½	24⅞	23½	24⅞	+ 2½
7½	4½	7	4½	N.P.	Ryan Consolidated	100	5¼	5¾	5¼	5¼	+ ⅛
10	7½	8	6	$10	Salt Creek Cons.	500	6½	6¾	6½	6¾	+ ⅛
36	26⅞	32	27¼	10	Salt Creek Prod.	6,300	30½	30⅞	29¾	30½	+ ½
4⅜	1⅜	7	2	5	Savoy Oil	.....	.....	.....	.....	.....	.....
27	7⅝	26½	17	10	Tidal Osage	1,900	21⅛	21½	20	21	— ⅛
25¾	7⅝	23¾	15	10	do non-voting	2,100	19	19¾	18¾	19¼	+ ¼
....	....	88	63½	100	Transcontinental pfd.	1,400	86	88	84	87	+ 2¾
3	4⅛	7⅜	4¼	5	Venezuelan Petrol	900	5⅛	5¼	5⅛	5⅛	0
31½	22	32⅝	20⅜	N.P.	Wilcox Oil & Gas	900	22¼	22½	22¼	22¼	0
9½	4⅜	8	4¾	$1	Woodley Petroleum	.....	.....	.....	.....	.....	.....

*New High †New Low xEx Dividend

American Natural Gas Markets Preferred

NEW YORK, Nov. 19.—American Natural Gas Co. through G. L. Christrom & Co. this week offered 50,000 shares of 7 per cent cumulative convertible preferred stock at $99.50 a share. This corporation was formed recently to take over the properties of the Oklahoma Natural Gas Corp. from the Phillips Petroleum Co. interests. The corporation in addition to this issue has outstanding $10,000,000 6½ per cent 15-year sinking fund gold debentures, and 651,200 shares of no par common stock.

The preferred stock is convertible into common at five shares of common for one of preferred until Feb. 1, 1930; at four shares of common until Feb. 1, 1932; at three shares of common until Feb. 1, 1935; at two shares until Feb. 1, 1928, and share for share until Feb. 1, 1945.

The American owns 95 per cent of the common stock of the Oklahoma Natural Gas Corp. Debentures of the Oklahoma Natural were called for redemption on Nov. 18.

Margay Oil Corp. Shows Earnings

CLEVELAND, Nov. 19.—Margay Oil Corp. of California, reports net earnings of $487,593 after expenses, and all legal reserves except federal income taxes for the eight months ended Aug. 31. Condensed income account for the eight months follows:

Total revenue	$758,521
Expenses	138,913
Operating income	$619,608
Other income	215,738
Total income	$835,346
Charges	111,078
Depreciation, depletion	236,675
Profit before income tax	$487,593

The Aug. 31 balance sheet shows total assets of $3,458,223, current assets of $896,705 and current liabilities of $223,973. Of the current assets $447,218 was cash and call loans. Capital and surplus represented by 149,758 no par shares, amounted to $2,009,846.

Transcontinental Has Deficit

CLEVELAND, Nov. 21.—Transcontinental Oil Co. reports net loss of $224,037 after interest, depreciation, depletion in the third quarter of this year, compared with loss of $75,093 in the second quarter and profit of $215,780 in the first quarter. Net loss for the three quarters was $83,350. The company has outstanding 157,500 shares of 7 per cent preferred stock and 3,742,029 shares of no par common.

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TRIBAL OSAGE OIL LEASES AT PUBLIC AUCTION, DECEMBER 12, 1927, BY UNITED STATES GOVERNMENT. December 12, 1927, at Pawhuska, Oklahoma, about 19,360 acres will be offered for oil leases in quarter section tracts. Bids will be for bonus in addition to royalties, 25% payable on day of sale, balance in three annual installments, with acceptable security. Within advertised area there are about 9,903 oil wells producing from one barrel to 1,000 barrels each, the total daily production for September, 1927, being about 62,000 barrels; also there are about 60 wells drilling. All lands are now leased separately for gas. Blue print maps of area advertised, showing tracts producing oil or gas, can be had for fifty cents each, also logs of producing oil or gas wells for twenty-five cents each well. Write U. S. Superintendent, Osage Agency, Pawhuska, Oklahoma, for maps, logs or other information.

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Rhodes Co., Jay B. 76
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Roy Manufacturing Co.

St. Louis Can Co.
St. Louis Pump & Equip. Co.
St. Louis Steel Package Co.
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Safety Lift Co. 58
Sargent Engineering Corp.
Selden Truck Corp.
Service Station Equip. Co.
Shaffer Tool Works 48
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Shotwell Pump & Tank Co.
Sinclair Refining Co. 96
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Skelly Oil Co. 14
Smith Corp., A. O.
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Sonneborn Sons, Inc., L. 91
Southwestern Engineering Corp.
Spears & Riddle Co.
Standard Boiler & Plate Iron Works
Standard Garment Co.
Standard Lift Co.
Standard Liquid Testing Devices, Inc.
Steel Drum Accessories Corp.
Steinke Brothers Mfg. Co., Inc.
Stevens Grease & Oil Co., A. J.
Stoll Oil Refg. Co. 75
Suender, W. Frederick
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Tagliabue Mfg. Co., C. J. 32
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Texas Pacific Coal & Oil Co.
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Truscon Steel Co.

Union Metal Mfg. Co.
United Filters Corp. 33
U. S. Air Compressor Co.
United States Cast Iron Pipe & Foundry Co.
Universal Oil Products Co. 45

Vacuum Oil Co. 72
Viking Pump Co.
Vilter Mfg. Co.
Vogt Machine Co., Henry

Wackman Welded Ware Co.
Wadhams Oil Co. 77
Walworth Co.
Warren Refining & Chemical Co. 76
Waukesha Motor Co.
Wayne Co.
Westcott & Greis, Inc.
West Coast Lumber Bureau
Western Iron & Foundry Co.
Wheaton Brass Works, A. W. 29
Wheeling Steel Corp.
Widdell Engineering Co., Inc.
Williams Sealing Corp.
Willock Oil Corp.
Wilson Welder & Metals Co. Inc.

Youngstown Welding Co., The